TOYOTOMI

Service Manual

MODEL: CON 35 INV i/o
CON 50 INV i/o

Part 1
General Information

1. Model Names of Indoor/Outdoor Units.....
2. External Appearance.....
3. Nomenclature.....
4. Features.....

1. Model Names of Indoor/Outdoor Units

1.1Indoor Units

Model name	Dimension (mm)	Net/Gross weight (kg)	Power supply
CONi 35INV	Width: 700 Height: 600 Depth: 210	15/20	220~240V-1ph-50Hz
CONi 50INV	Width: 700 Height: 600 Depth: 210	15/20	220~240V-1ph-50Hz

1.2 Outdoor Units

Model name	Dimension (mm)	Net/Gross weight (kg)	Power supply
CONo 35INV	Width: 761 Height: 593 Depth: 279	39.5/42.5	220~240V-1ph-50Hz
CONo 50INV	Width: 880 Height: 707 Depth: 340	63/67	220~240V-1ph-50Hz

2. External Appearance

2.1 Indoor units

CONi 35INV / CONi 50INV

2.2 Outdoor unit

CONo 35INV

CONo 50INV

3. Nomenclature

CON → **CONSOLE TYPE**
i / o → **INDOR / OUTDOOR UNIT**
35 / 50 → **CAPACITY (for example: 35=3.5kw)**
INV → **INVERTER DRIVE**

4. Features

4.1 Universal outdoor unit design

Indoor unit with the same capacity can match with the same outdoor unit.

4.2 High efficiency and energy saving.

Thanks to the DC inverter technology and optimized piping system, the EER of whole series can easily reach A-class.

4.3 Low noise and low starting current.

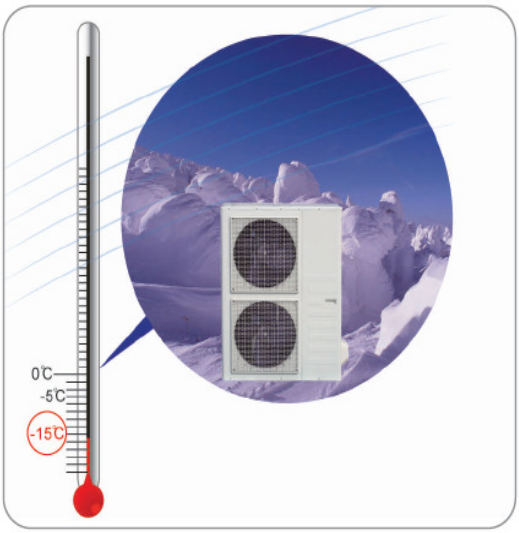
Thanks to the DC inverter technology, the system can work with low noise, and very small starting current.

4.4 Intelligent refrigerant adjustment technology（except 12000Btu/h）

Throttle part is made up of capillary and electronic expansion valve (EXV). The outdoor unit can output the most accurate capacity in any condition.

4.5 Working in cooling mode under -15℃（except 12000Btu/h）

Outdoor unit built-in with low ambient kit, it can control the outdoor unit's fan and cooling can be performed throughout the year for computer rooms, banquet halls, etc. Wide operation range covers outdoor temperatures as low as -15℃ for cooling.



4.6 All indoor units have Auto-restart function.

TLC-IC-2011.1

Console Type

1. Features.....
2. Specifications.....
3. Dimensions.....
4. Service Space.....
5. Wiring Diagrams.....
6. Air Velocity and Temperature Distributions.....
7. Capacity Tables.....
8. Electric Characteristics.....
9. Sound Levels.....
10. Exploded View.....
11. Accessories.....

TLC-IC-2011.1

1. Features

1. Consumes up to 30% less energy than non-inverter units

——DC inverter compressor

——indoor fan motor adopts DC motor

2. Achieves set temperature more quickly

——air supplying from top and bottom or from top only

——air inlet from four directions

3. Compact unit body, space saving

——this unit body is very thin and harmonious with room. It is beautiful, elegant and space saving.

——lightweight and compact.

4. Flexible installation.

——can be used for floor standing or lower wall applications

——as a floor standing floor model, it can be semi or fully recessed without loss of capacity.

5. High efficiency filter

——built in Formaldehyde nemesis filter

——active-carbon and biological anti-virus filter is optional.

6. Comfort

——flexible air blow: vertical auto swing and wide angle louvers ensure that warm air reaches the furthest corners of the room and increase the air flow coverage

——Low noise operation, lowest to 23Db

——Low starting power and precise room temperature adjustment

7. Powerful mode can be selected for rapid cooling or heating.

8. Easy cleaning grille and maintenance

9. Indoor unit adopts DC motor, it has five level fan speed meet different requirements.

2. Specifications

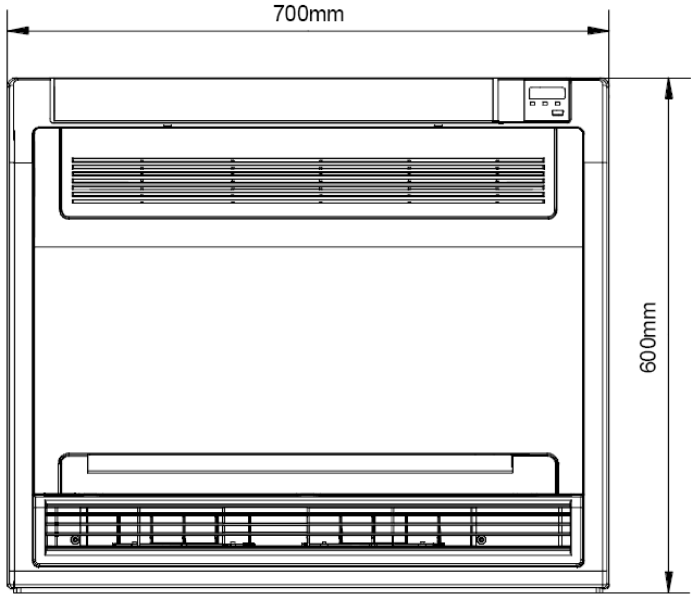
Model	Indoor	Model name	**CONi 35INV**	**CONi 50INV**
		Power supply	220~240V-1Ph-50Hz	220~240V-1Ph-50Hz
	Outdoor	Model name	**CONo 35INV**	**CONo 50INV**
		Power supply	220~240V-1Ph-50Hz	220~240V-1Ph-50Hz
Cooling	Capacity	KW	4.1-3.52-1.4	5.7-5.28-1.7
	Input	KW	1.4-1.086-0.35	2.4-1.63-0.55
	Current	A	12-4.3-2.0	12.3-6.9-2.45
	EER		3.3	3.24
Heating	Capacity	KW	4.75-4.0-1.4	6.2-5.86-1.45
	Input	KW	1.88-1.105-0.38	2.6-1.62-0.72
	Rated current	A	12-6.6-2.0	12.3-6.53-3.13
	COP		3.62	3.62
Max. input consumption		W	2550	2600
Max. current		A	12	12.3
Compressor	Model		DA108X1C-20FZ3	JU1015D4
	Type		DC Inverter Rotary	DC Inverter Rotary
	Brand		TOSHIBA	HITACHI
	Capacity	Btu/h	10921	15017
	Input	W	855	1585
	Rated current(RLA)	A	5.3	8.8
	Thermal protector		Internal	Internal
	Capacitor	μF	/	/
	Refrigerant oil	ml	ESTER OIL VG74 480ml	HAF68D1 580ml
Indoor fan motor	Model		RD-280-20-8A	RD-280-20-8A
	Type		DC MOTOR	DC MOTOR
	Input	w	18	28
	Capacitor	μF	/	/
	Speed(hi/mi/lo)	r/min	420/460/560/610/680	530/680/780/840/890
Indoor coil	a.Number of rows		2	2
	b.Tube pitch(a)x row pitch(b)	mm	21*13.37	21*13.37
	c.Fin spacing	mm	1.3	1.3
	d.Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e.Tube outside dia.and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f.Coil length x height x width	mm	512*318*26.74	512*318*26.74
	g.Number of circuits		2	2
Indoor air flow		m^3/h	350/380/460/490/550	440/560/640/700/740
Sound level (sound pressure)		dB(A)	23/27/31/33/35	29/31/33/35/38
Indoor unit	Dimension (W x H x D)	mm	700*600*210	700*600*210
	Packing (W x H x D)	mm	810*710*370	810*710*435
	Net/Gross weight	kg	20/25	20/25
Outdoor fan motor	Model		YDK24-6G	YDK53-6Y
	Type		AC MOTOR	AC MOTOR

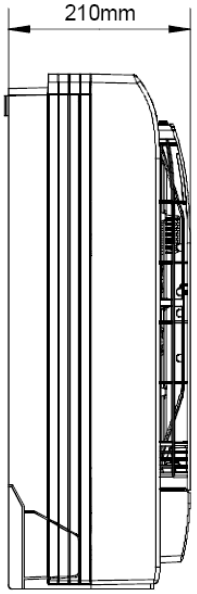
	Input	W	59/47	129/86
	Capacitor	μF	2.5	3
	Speed	r/min	800/550	770/560
Outdoor coil	Number of rows		2	2
	Tube pitch(a)x row pitch(b)	mm	25.4*22	25.4*22
	Fin spacing	mm	1.4	1.7
	Fin type (code)		Hydrophilic aluminium	Hydrophilic aluminum
	Tube outside dia.and type	mm	Φ9.5 innergroove tube	Φ9.5 Innergroove tube
	Coil length x height x width	mm	637*558*44	748*660*44
	Number of circuits		2	2
Outdoor air flow		m^3/h	2500/1600	2400/1680
Sound level（sound pressure）		dB(A)	48/44	52/47
Outdoor unit	Dimension(WxDxH)	mm	761×593×279	842×695×324
	Packing (WxDxH)	mm	887×655×355	965×770×395
	Net/Gross weight	kg	42/45	62/66
Refrigerant	Type		R410A	R410A
	Charged volume	g	1400	1700
Throttle type			Capillary	EXV
Design pressure (Hi/Lo)		MPa	4.2/2.0	4.2/2.0
Refrigerant piping	Liquid side/ Gas side	mm	φ6.4/12.7	φ6.4/12.7
	Max. refrigerant pipe length	m	10	20
	Max. difference in level(Outdoor is up)	m	5	10
	Max. difference in level (Outdoor is down)	m	5	10
Connection wiring	Power wiring (Indoor)	mm^2	3 core x 1.5	——
	Power wiring (Outdoor)	mm^2	——	3 core×2.5
	Signal wiring	mm^2	4-core shielded wire×1.5	3-core shielded wire x0.5
Wireless remote controller (Indoor)			R51D/E	
Operation temp (Indoor)		℃	17～30	
Ambient temp (Outdoor)		℃	Cooling：-5~43(*) Heating：-15~21	Cooling：-15~43(*) Heating：-15~21

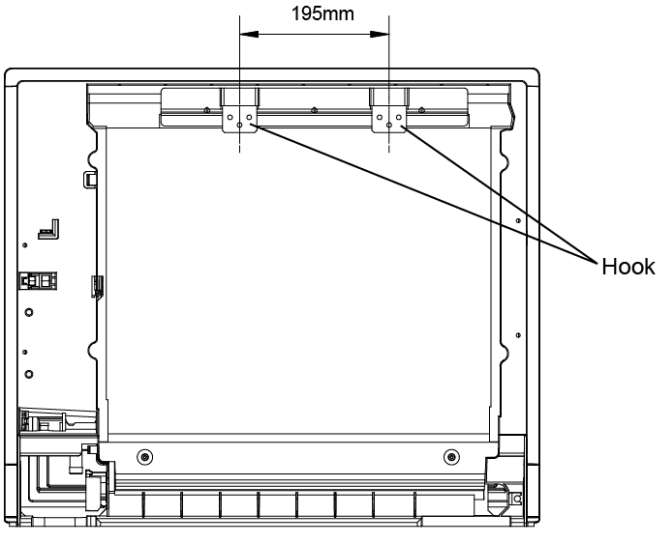
(*) Optional Low Ambient Kit included. Cooling operation Range without it: 7 to 43°C

3. Dimensions

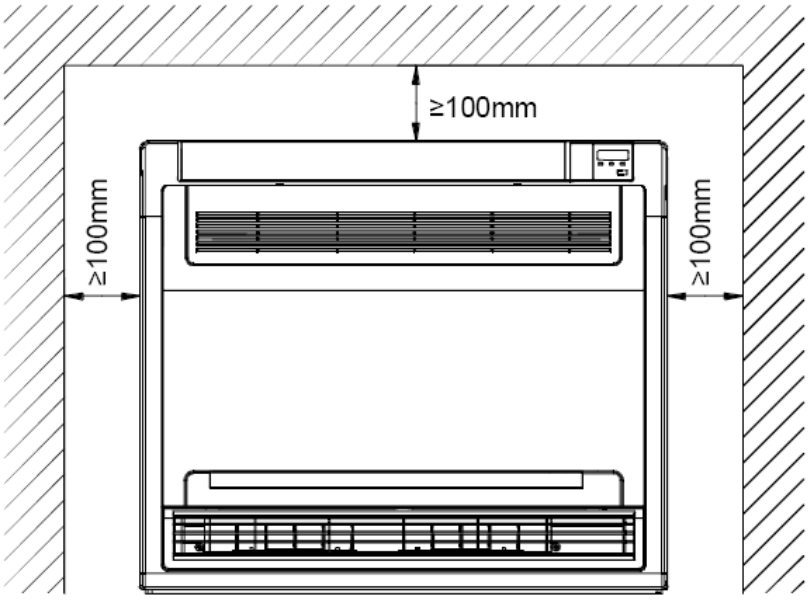
CONi 35INV, CONi 50INV

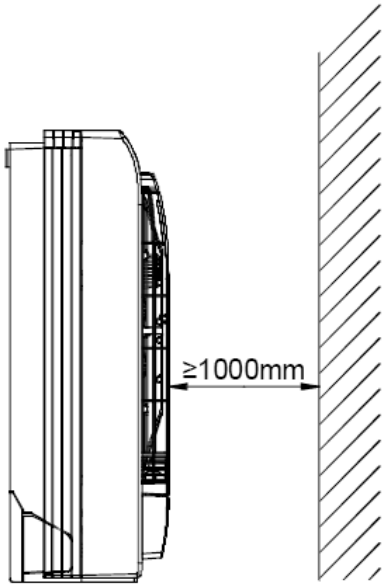






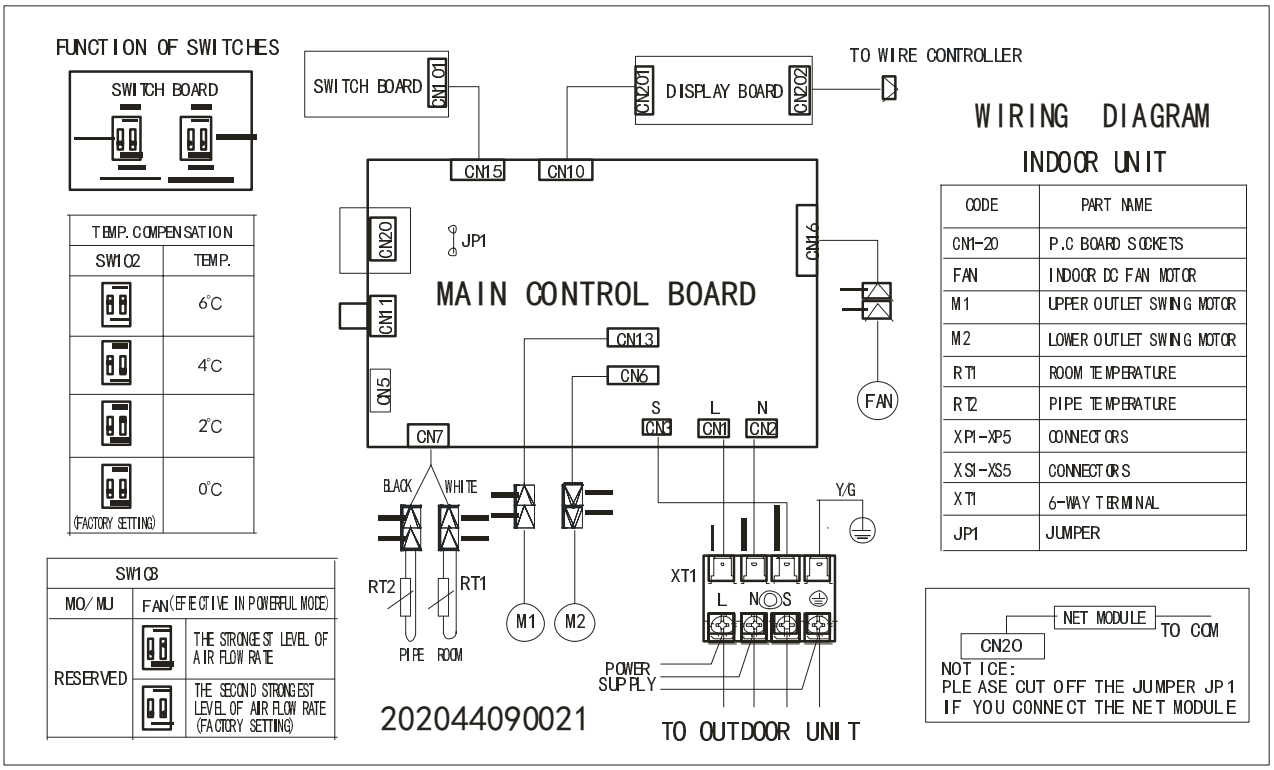
4. Service Space



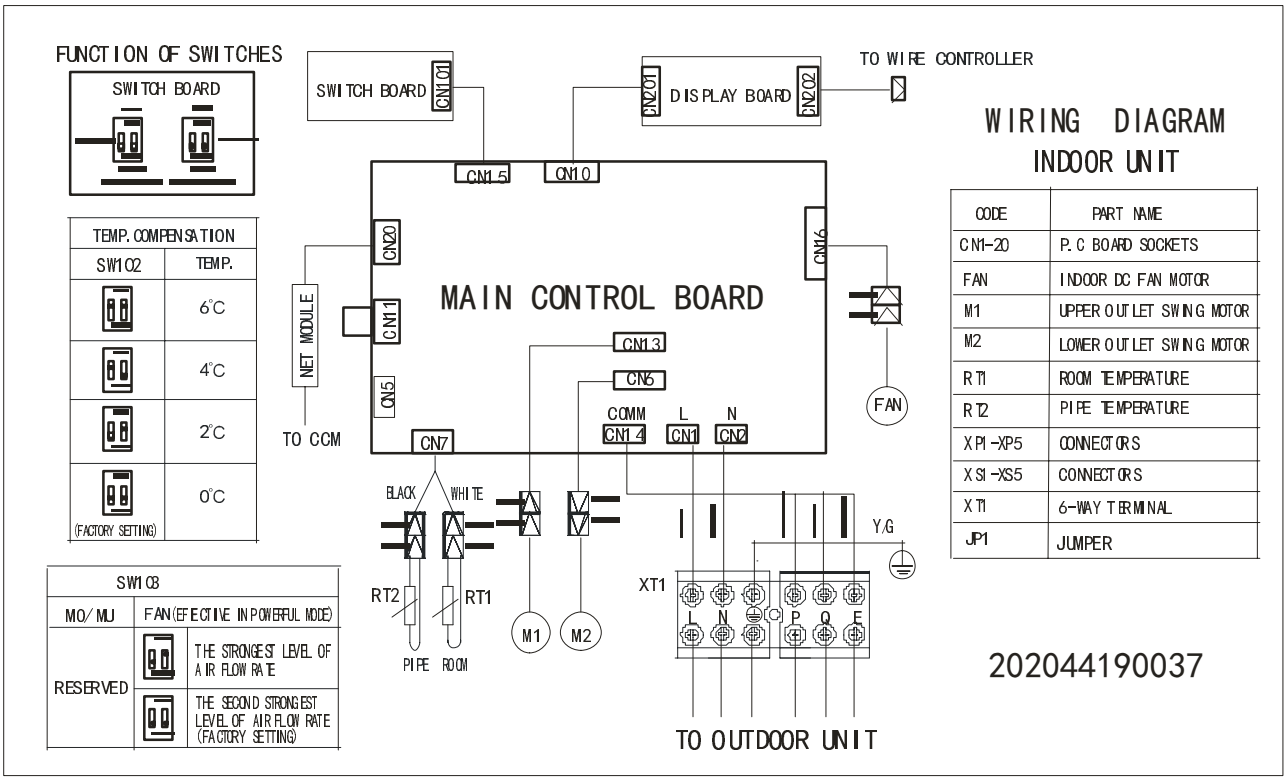


5. Wiring Diagrams

CONi 35INV



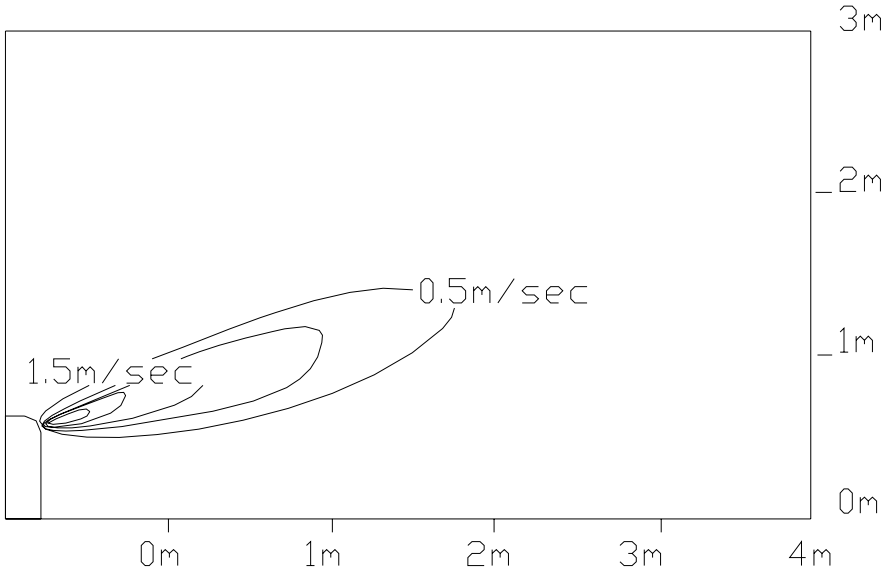
CONi 50INV



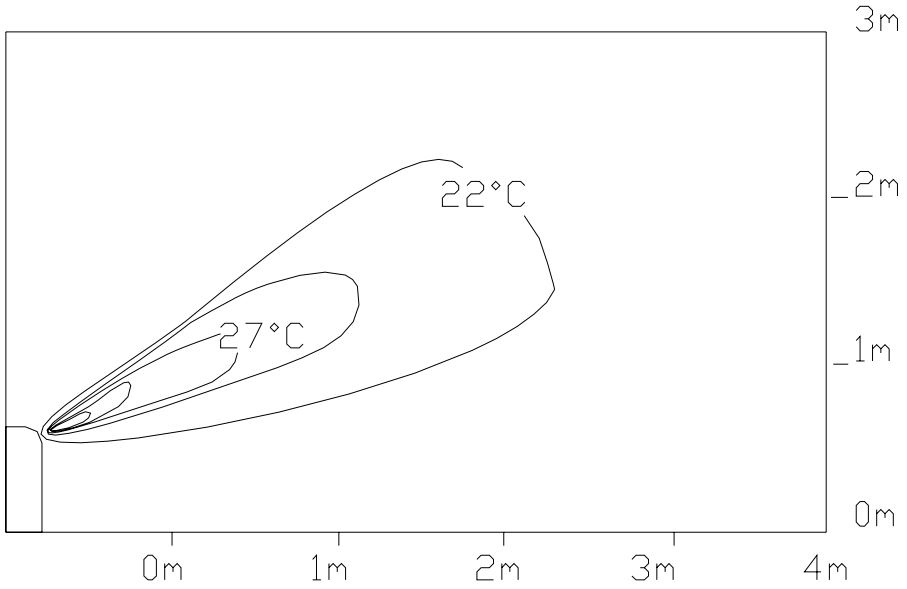
6. Air Velocity and Temperature Distributions

Discharge angle 60

Airflow velocity



Temperature



7. Capacity Tables

CONi 35INV

Cooling

Outdoor temperature(℃ DB)	Indoor temperature(℃ WB)													
	14.00		16.00		18.00		19.00		20.00		22.00		24.00	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
10.00	2.42	0.35	2.86	0.44	3.30	0.52	3.52	0.57	3.70	0.61	3.78	0.61	3.86	0.62
12.00	2.42	0.36	2.86	0.44	3.30	0.53	3.52	0.58	3.70	0.62	3.78	0.62	3.86	0.63
14.00	2.42	0.36	2.86	0.45	3.30	0.54	3.52	0.59	3.70	0.63	3.78	0.64	3.86	0.64
16.00	2.42	0.37	2.86	0.46	3.30	0.55	3.52	0.60	3.70	0.65	3.78	0.65	3.86	0.65
18.00	2.42	0.38	2.86	0.47	3.30	0.56	3.52	0.61	3.70	0.66	3.78	0.66	3.86	0.66
19.00	2.42	0.38	2.86	0.48	3.30	0.57	3.52	0.62	3.70	0.67	3.78	0.67	3.86	0.68
21.00	2.42	0.41	2.86	0.51	3.30	0.61	3.52	0.66	3.70	0.72	3.78	0.72	3.86	0.73
23.00	2.42	0.44	2.86	0.55	3.30	0.66	3.52	0.71	3.70	0.77	3.78	0.77	3.86	0.78
25.00	2.42	0.47	2.86	0.59	3.30	0.70	3.52	0.76	3.70	0.82	3.78	0.82	3.86	0.83
27.00	2.42	0.50	2.86	0.63	3.30	0.75	3.52	0.81	3.70	0.88	3.78	0.88	3.86	0.89
29.00	2.42	0.54	2.86	0.67	3.30	0.80	3.52	0.87	3.70	0.94	3.78	0.94	3.86	0.95
31.00	2.42	0.57	2.86	0.71	3.30	0.85	3.52	0.93	3.70	1.00	3.78	1.00	3.86	1.01
33.00	2.42	0.61	2.86	0.76	3.30	0.91	3.52	0.99	3.70	1.06	3.78	1.07	3.86	1.08
35.00	2.42	0.65	2.86	0.81	3.30	0.97	3.52	1.08	3.70	1.13	3.78	1.14	3.86	1.15
37.00	2.42	0.69	2.86	0.86	3.30	1.03	3.52	1.12	3.70	1.20	3.78	1.21	3.86	1.22
39.00	2.42	0.69	2.86	0.86	3.30	1.03	3.52	1.12	3.70	1.21	3.78	1.21	3.86	1.22
41.00	2.42	0.70	2.86	0.87	3.30	1.04	3.52	1.13	3.70	1.21	3.78	1.22	3.86	1.23
43.00	2.42	0.70	2.86	0.87	3.30	1.04	3.52	1.13	3.70	1.22	3.78	1.22	3.86	1.24

Heating

Outdoor air temp.		Indoor temperature(℃ DB)											
		16		18		20		21		22		24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
℃ DB	℃ WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-14.7	-15	2.54	0.96	2.54	0.98	2.54	1.00	2.44	0.96	2.34	0.91	2.14	0.82
-12.6	-13	2.68	0.97	2.68	1.00	2.68	1.02	2.57	0.97	2.47	0.93	2.26	0.84
-10.5	-11	2.82	0.99	2.82	1.01	2.82	1.03	2.71	0.99	2.60	0.94	2.37	0.85
-9.5	-10	2.89	1.00	2.89	1.02	2.89	1.04	2.77	0.99	2.66	0.95	2.43	0.86
-8.5	-9.1	2.96	1.01	2.96	1.03	2.96	1.05	2.84	1.00	2.72	0.96	2.49	0.86
-7	-7.6	3.06	1.02	3.06	1.04	3.06	1.06	2.94	1.01	2.82	0.97	2.57	0.87
-5	-5.6	3.19	1.03	3.19	1.05	3.19	1.08	3.07	1.03	2.94	0.98	2.69	0.89
-3	-3.7	3.33	1.05	3.33	1.07	3.33	1.09	3.20	1.04	3.06	1.00	2.80	0.90
0	-0.7	3.53	1.07	3.53	1.09	3.53	1.11	3.39	1.07	3.25	1.02	2.97	0.92
3	2.2	3.73	1.09	3.73	1.12	3.73	1.13	3.58	1.09	3.43	1.04	3.14	0.94
5	4.1	3.87	1.11	3.87	1.13	3.87	1.11	3.71	1.10	3.56	1.05	3.25	0.95
7	6	4.00	1.12	4.00	1.15	4.00	1.10	3.84	1.12	3.68	1.07	3.37	0.96
9	7.9	4.00	1.08	4.00	1.11	4.00	1.09	3.84	1.08	3.68	1.03	3.37	0.93
11	9.8	4.00	1.05	4.00	1.07	4.00	1.07	3.84	1.04	3.68	1.00	3.37	0.90
13	11.8	4.00	1.01	4.00	1.03	4.00	1.04	3.84	1.01	3.68	0.96	3.37	0.87
15	13.7	4.00	0.97	4.00	0.99	4.00	1.01	3.84	0.97	3.68	0.92	3.37	0.84

CONi 50INV

Cooling

Outdoor temperature(℃ DB)	Indoor temperature(℃ WB)													
	14.00		16.00		18.00		19.00		20.00		22.00		24.00	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
10.00	3.65	0.52	4.31	0.65	4.97	0.78	5.28	0.85	5.57	0.91	5.69	0.92	5.82	0.93
12.00	3.65	0.53	4.31	0.66	4.97	0.80	5.28	0.86	5.57	0.93	5.69	0.93	5.82	0.94
14.00	3.65	0.54	4.31	0.68	4.97	0.81	5.28	0.88	5.57	0.95	5.69	0.95	5.82	0.96
16.00	3.65	0.55	4.31	0.69	4.97	0.83	5.28	0.89	5.57	0.96	5.69	0.97	5.82	0.98
18.00	3.65	0.56	4.31	0.70	4.97	0.84	5.28	0.91	5.57	0.98	5.69	0.98	5.82	0.99
19.00	3.65	0.57	4.31	0.71	4.97	0.85	5.28	0.93	5.57	1.00	5.69	1.00	5.82	1.01
21.00	3.65	0.61	4.31	0.76	4.97	0.92	5.28	0.99	5.57	1.07	5.69	1.07	5.82	1.08
23.00	3.65	0.66	4.31	0.82	4.97	0.98	5.28	1.06	5.57	1.15	5.69	1.15	5.82	1.16
25.00	3.65	0.70	4.31	0.88	4.97	1.05	5.28	1.14	5.57	1.23	5.69	1.23	5.82	1.24
27.00	3.65	0.75	4.31	0.94	4.97	1.12	5.28	1.22	5.57	1.31	5.69	1.32	5.82	1.33
29.00	3.65	0.80	4.31	1.00	4.97	1.20	5.28	1.30	5.57	1.40	5.69	1.40	5.82	1.42
31.00	3.65	0.86	4.31	1.07	4.97	1.28	5.28	1.39	5.57	1.49	5.69	1.50	5.82	1.51
33.00	3.65	0.91	4.31	1.14	4.97	1.36	5.28	1.48	5.57	1.59	5.69	1.60	5.82	1.61
35.00	3.65	0.97	4.31	1.21	4.97	1.45	5.28	1.63	5.57	1.69	5.69	1.70	5.82	1.71
37.00	3.65	1.03	4.31	1.29	4.97	1.54	5.28	1.67	5.57	1.80	5.69	1.81	5.82	1.82
39.00	3.65	1.04	4.31	1.29	4.97	1.55	5.28	1.68	5.57	1.81	5.69	1.81	5.82	1.83
41.00	3.65	1.04	4.31	1.30	4.97	1.55	5.28	1.68	5.57	1.82	5.69	1.82	5.82	1.84
43.00	3.65	1.05	4.31	1.30	4.97	1.56	5.28	1.69	5.57	1.82	5.69	1.83	5.82	1.85

Heating

Outdoor air temp.		Indoor temperature(℃ DB)											
		16		18		20		21		22		24	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
℃ DB	℃ WB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-14.7	-15	3.72	1.37	3.72	1.40	3.72	1.43	3.57	1.36	3.43	1.30	3.13	1.18
-12.6	-13	3.93	1.39	3.93	1.42	3.93	1.45	3.77	1.39	3.62	1.32	3.30	1.20
-10.5	-11	4.13	1.41	4.13	1.44	4.13	1.47	3.97	1.41	3.81	1.34	3.48	1.22
-9.5	-10	4.23	1.42	4.23	1.45	4.23	1.48	4.07	1.42	3.90	1.35	3.56	1.22
-8.5	-9.1	4.33	1.43	4.33	1.47	4.33	1.50	4.16	1.43	3.99	1.36	3.64	1.23
-7	-7.6	4.48	1.45	4.48	1.48	4.48	1.51	4.30	1.45	4.12	1.38	3.77	1.25
-5	-5.6	4.68	1.47	4.68	1.50	4.68	1.54	4.49	1.47	4.31	1.40	3.93	1.27
-3	-3.7	4.87	1.49	4.87	1.53	4.87	1.56	4.68	1.49	4.49	1.42	4.10	1.28
0	-0.7	5.17	1.53	5.17	1.56	5.17	1.59	4.96	1.52	4.76	1.45	4.35	1.31
3	2.2	5.47	1.56	5.47	1.59	5.47	1.63	5.25	1.55	5.03	1.48	4.60	1.34
5	4.1	5.66	1.58	5.66	1.61	5.66	1.63	5.44	1.58	5.21	1.50	4.76	1.36
7	6	5.86	1.60	5.86	1.64	5.86	1.62	5.63	1.60	5.39	1.52	4.93	1.38
9	7.9	5.86	1.55	5.86	1.58	5.86	1.61	5.63	1.54	5.39	1.47	4.93	1.33
11	9.8	5.86	1.49	5.86	1.53	5.86	1.56	5.63	1.49	5.39	1.42	4.93	1.28
13	11.8	5.86	1.44	5.86	1.47	5.86	1.50	5.63	1.44	5.39	1.37	4.93	1.24
15	13.7	5.86	1.39	5.86	1.42	5.86	1.45	5.63	1.38	5.39	1.32	4.93	1.19

8. Electric Characteristics

Model	Indoor Unit				Power Supply	IFM	
	Hz	Voltage	Min	Max	MFA	kW	FLA
CONi 35INV	50	220~240V	198V	254V	16	0.02	0.018
CONi 50INV	50	220~240V	198V	254V	16	0.02	0.028

Remark:

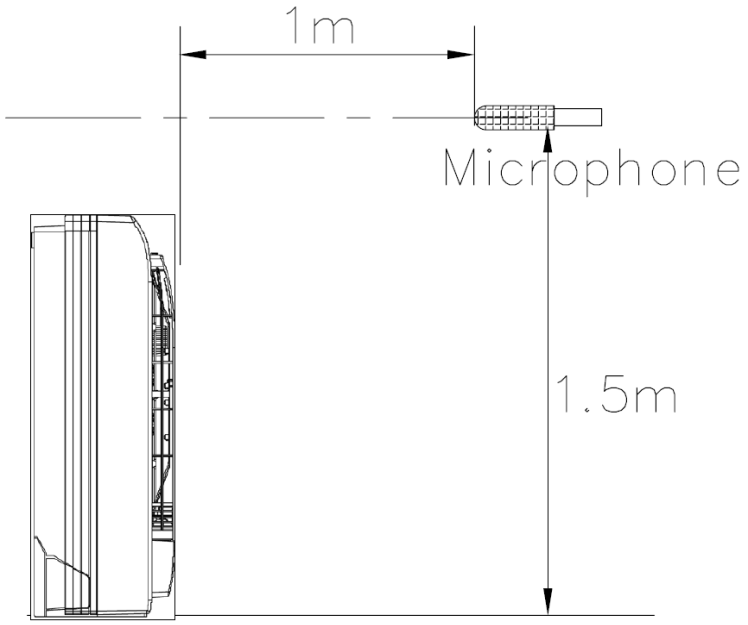
MFA: Max. Fuse Amps. (A)

KW: Fan Motor Rated Output (KW)

FLA: Full Load Amps. (A)

IFM: Indoor Fan Motor

9. Sound Levels



Model	Noise level dB(A)				
	Highest	Higher	H	M	L
CONi 35INV	35	33	31	27	23
CONi 50INV	38	35	33	31	29

11. Accessories

CONi 35INV, CONi 50INV

	Name	Shape	Quantity
Installation fittings	Hook		2
Remote controller & Its Frame	Remote controller		1
	Frame		1
	Mounting screw(ST2.9×10-C-H)		2
	Alkaline dry batteries (AM4)		2
Others	Installation manual	/	1
	Owner's manual	/	1

Part 3
Outdoor Units

1. Dimensions.....

2. Service Space.....

3. Piping Diagrams.....

4. Wiring Diagrams.....

5. Electric Characteristics.....

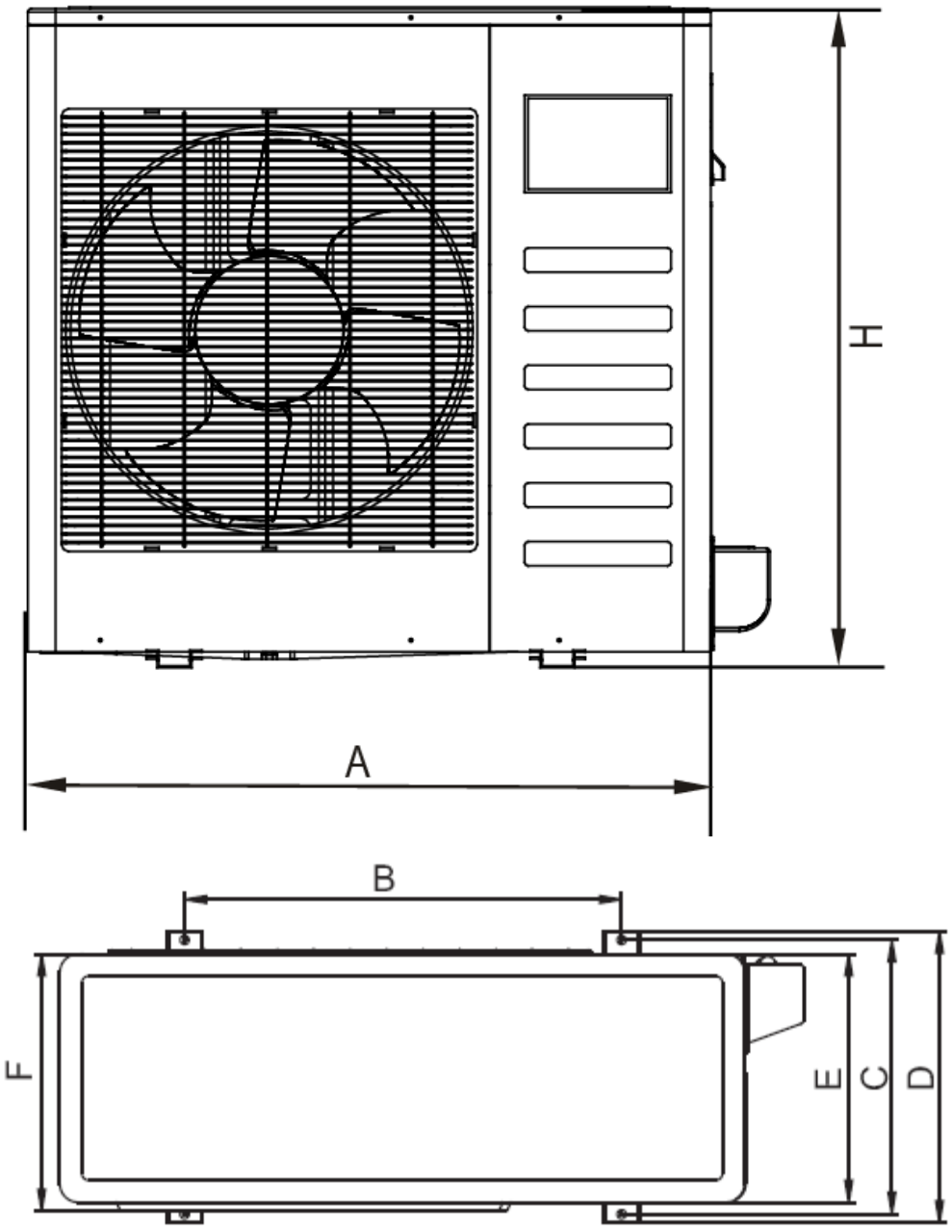
6. Sound Levels.....

7. Exploded View.....

8. Operation Limits.....

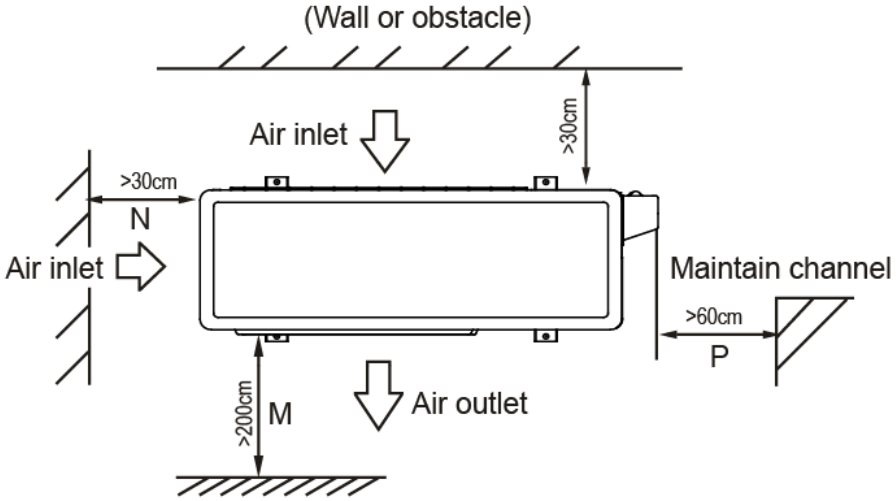
9. Troubleshooting.....

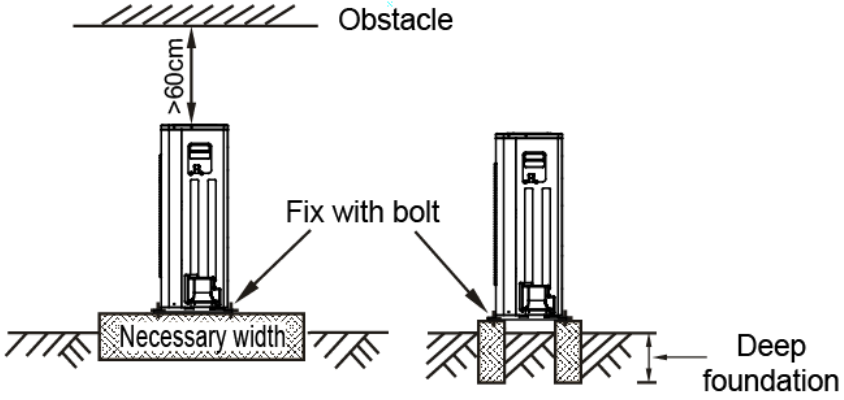
1. Dimensions



Model	A	B	C	D	E	F	H
CONo 35INV	761	530	290	315	270	279	593
CONo 50INV	842	560	335	360	312	324	695

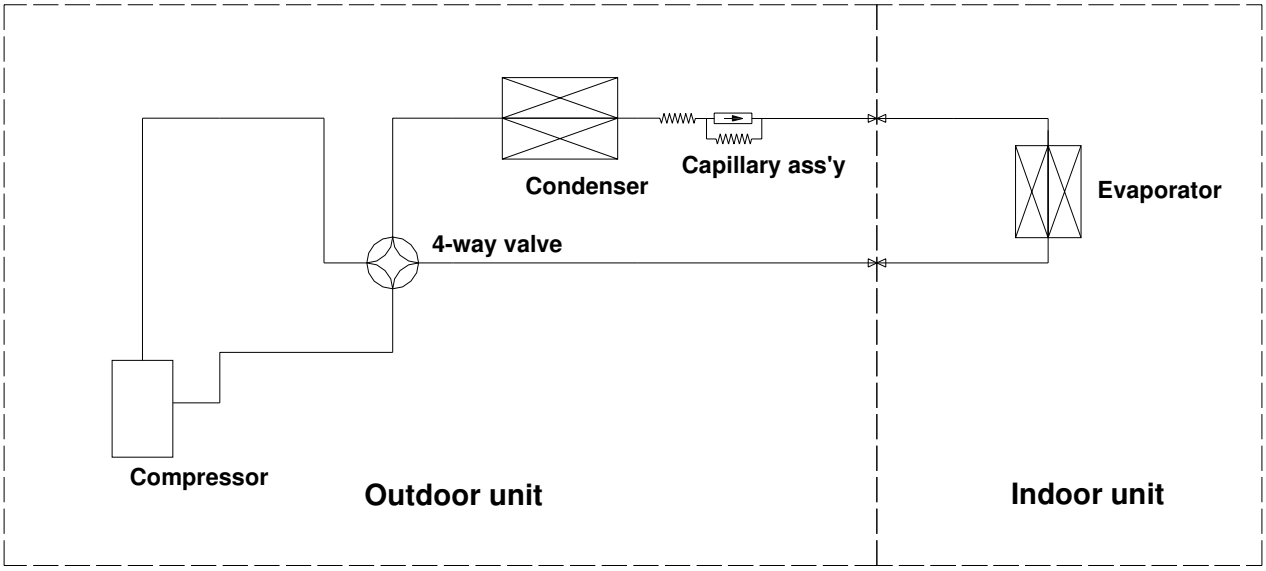
2. Service Space



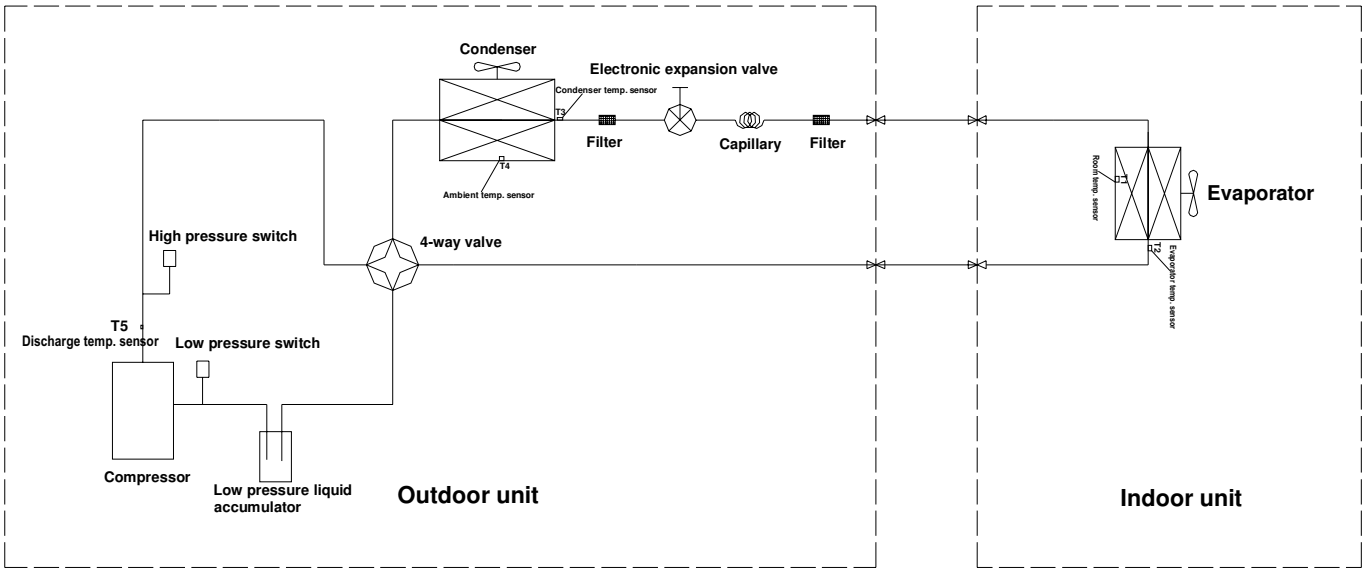


3. Piping Diagrams

CONo 35INV

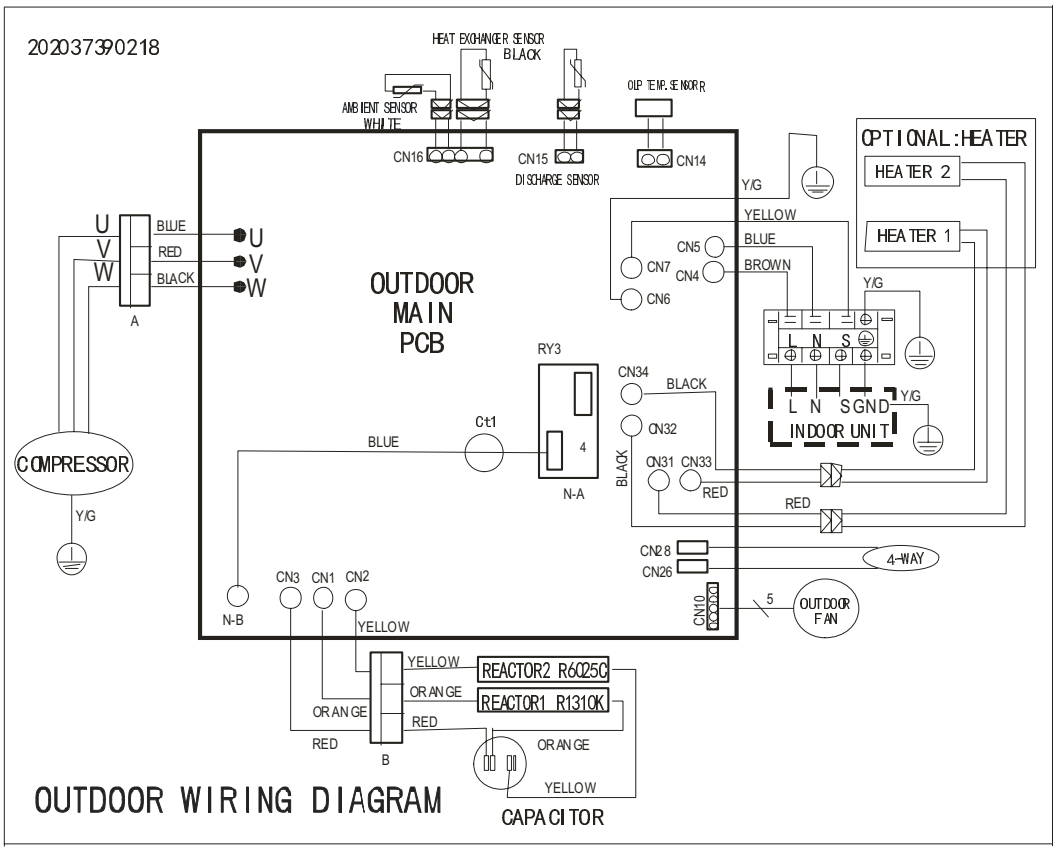


CONo 50INV

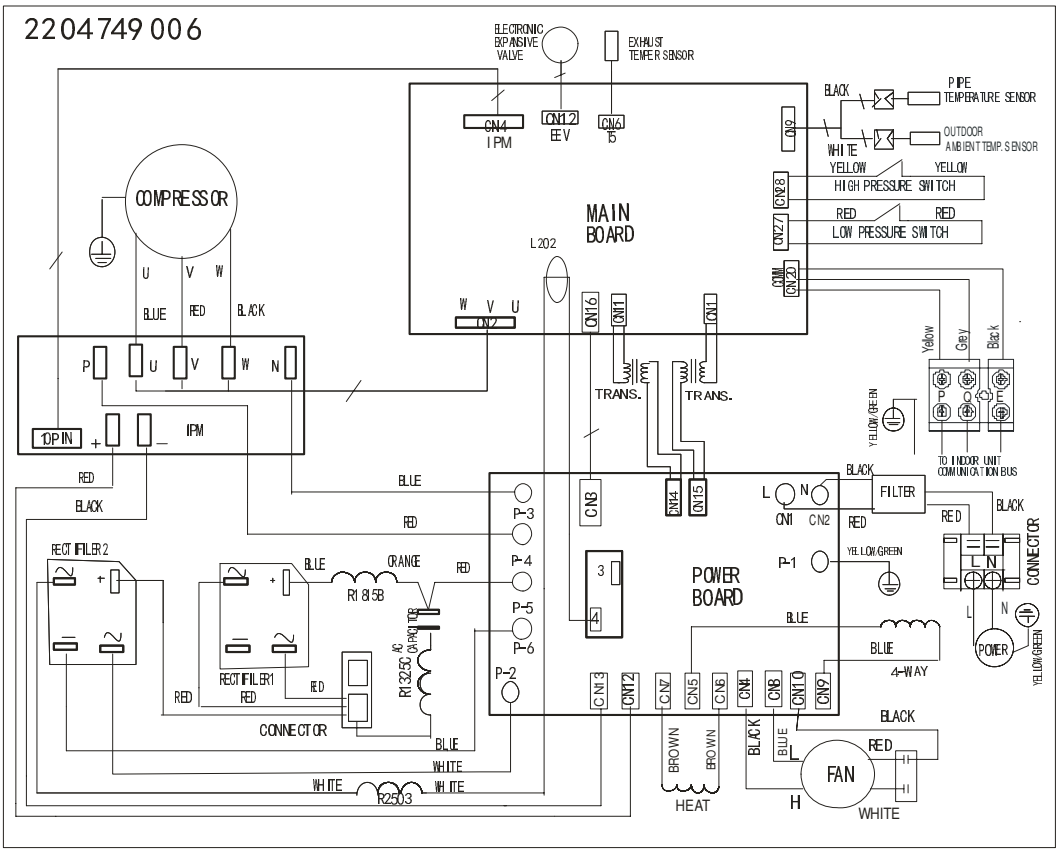


4. Wiring Diagrams

CONo 35INV



CONo 50INV



5. Electric Characteristics

Model	Outdoor Unit				Power Supply		Compressor	OFM	
	Hz	Voltage	Min.	Max.	TOCA	MFA	RLA	kW	FLA
CONo 35INV	50	220~240V	198V	254V	20	16	5.3	0.024	0.27
CONo 50INV	50	220~240V	198V	254V	20	16	8.8	0.053	0.59

Remark:

TOCA: Total Over-current Amps. (A)

MFA: Max. Fuse Amps. (A)

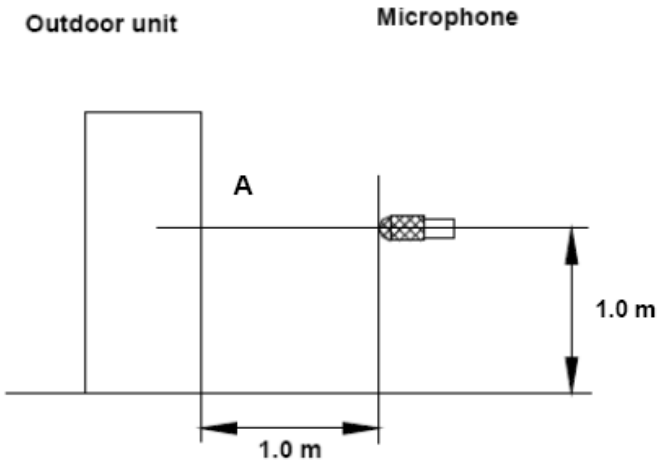
RLA: Rated Locked Amps. (A)

OFM: Outdoor Fan Motor.

FLA: Full Load Amps. (A)

KW: Rated Motor Output (KW)

6. Sound Levels

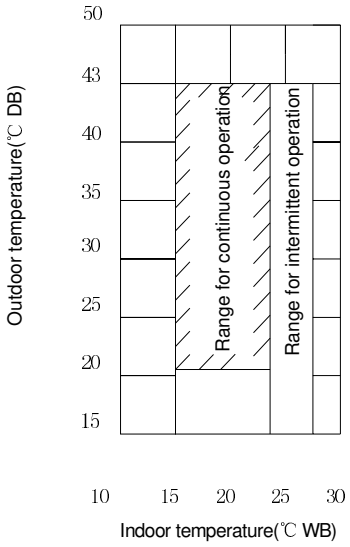


Model	Noise level dB(A)	
	Hi	Lo
CONo 35INV	48	44
CONo 50INV	52	47

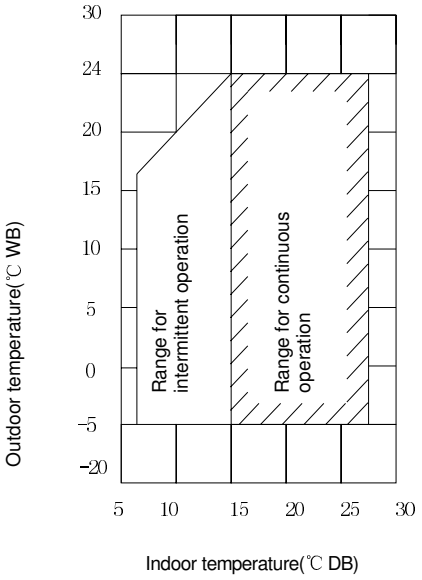
8. Operation Limits

Item / Model	Cooling mode		Heating mode	
	Outdoor	Indoor	Outdoor	Indoor
CONo 35INV	21℃~43℃	17℃~30℃	-5℃~24℃	17℃~30℃

Cooling

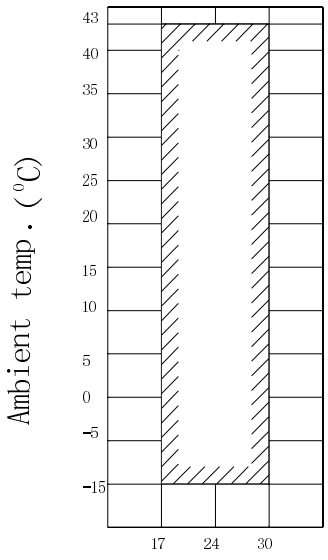


Heating

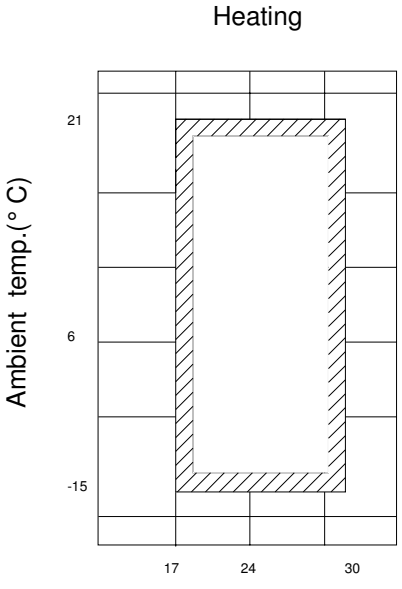


Item / Model	Cooling mode		Heating mode	
	Outdoor	Indoor	Outdoor	Indoor
CONo 50INV	-15℃~43℃(*)	17℃~30℃	-15℃~21℃	17℃~30℃

cooling



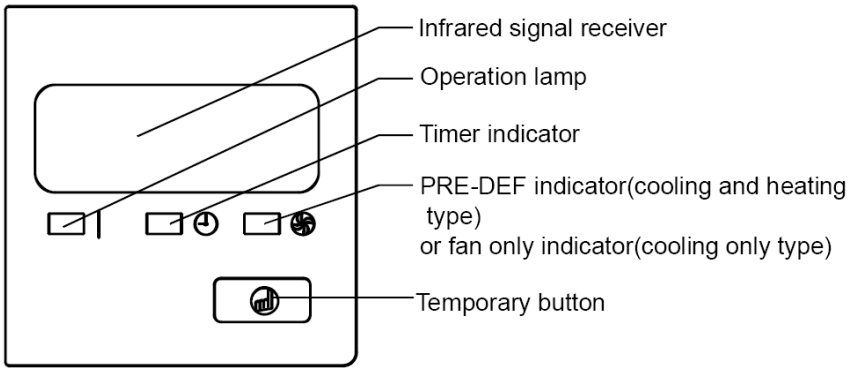
Heating



(*) Low ambient kit included

9. Troubleshooting

9.1 Indoor unit malfunction



◆ **LED indication CONo 35INV**

No	Running lamp	Timer lamp	Defrosting lamp	Malfunction
1	☆	×	×	Room temperature sensor checking channel is abnormal
2	×	×	☆	Evaporator sensor checking channel is abnormal
3	×	☆	×	In-outdoor unit communication checking channel is abnormal
4	☆	☆	×	EEPROM malfunction
5	☆	×	☆	Module protection
6	☆	☆	☆	Outdoor temperature sensors malfunction
7	☆	☆	●	Outdoor unit voltage protection
8	☆	●	×	Compressor discharge over-temperature protection
9	☆	●	●	Outdoor unit current protection

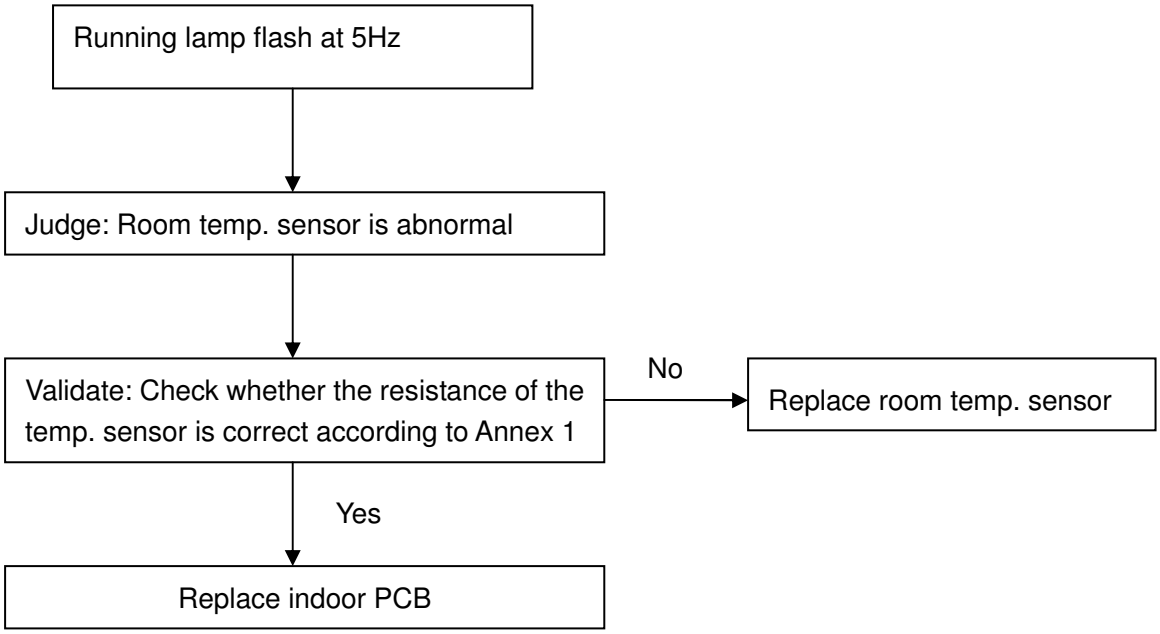
(× Extinguish, ☆ Flash at 5Hz, ● On)

◆ **LED indication CONo 50INV**

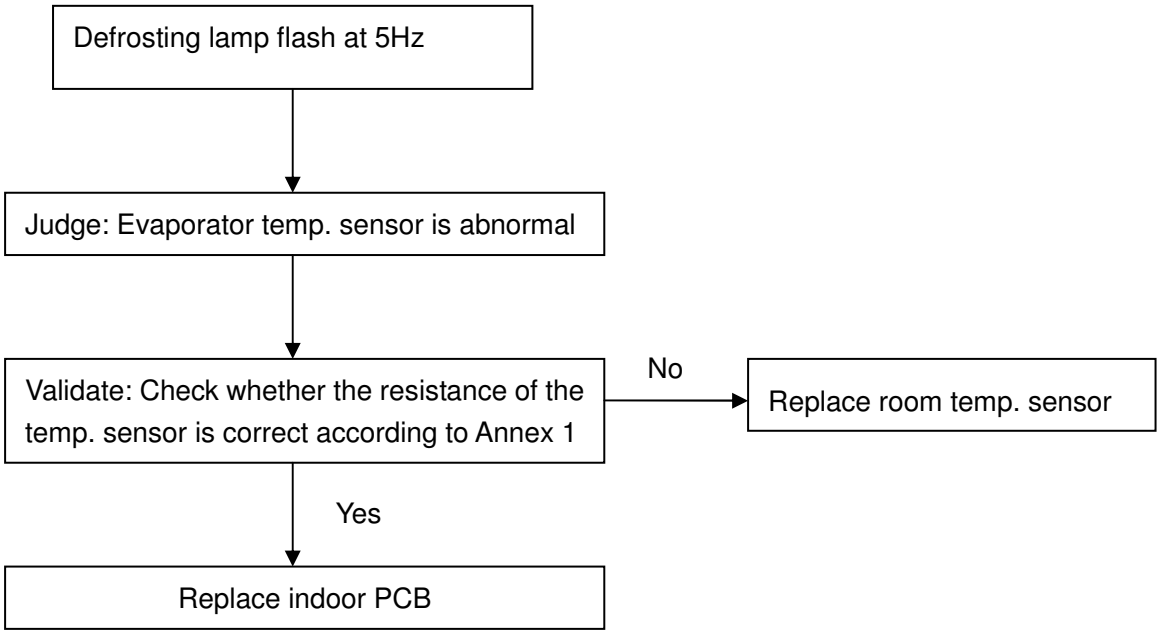
No.	Running lamp	Timer lamp	Defrosting lamp	Malfunction
1	☆	×	×	Room temperature sensor malfunction
2	×	☆	×	Indoor/outdoor unit communication is abnormal
3	×	×	◎	Outdoor unit is abnormal.

◆ **CONo 35INV**

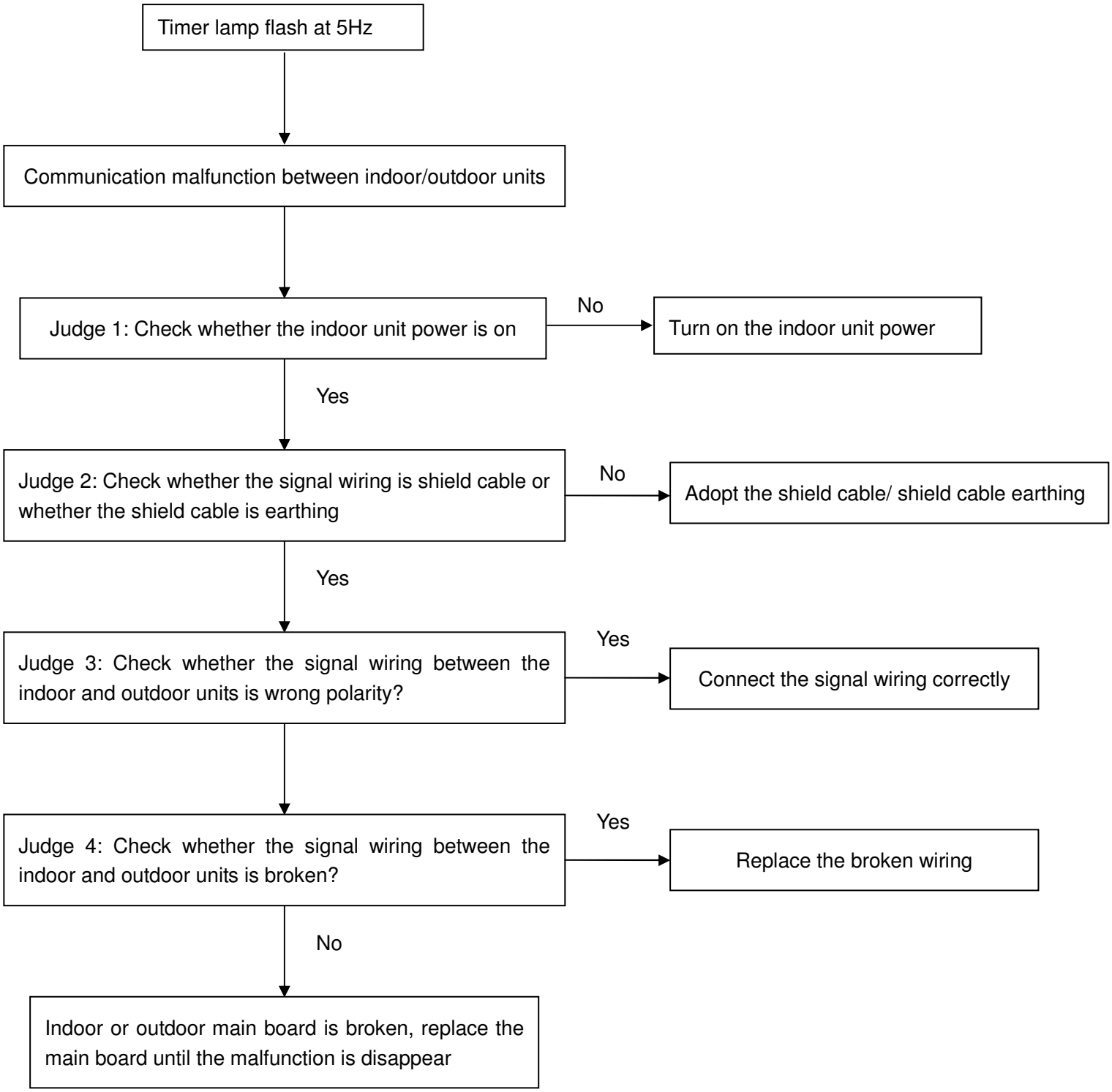
1. Running lamp flash at 5Hz


Running lamp flash at 5Hz
Judge: Room temp. sensor is abnormal
Validate: Check whether the resistance of the temp. sensor is correct according to Annex 1
No
Replace room temp. sensor
Yes
Replace indoor PCB

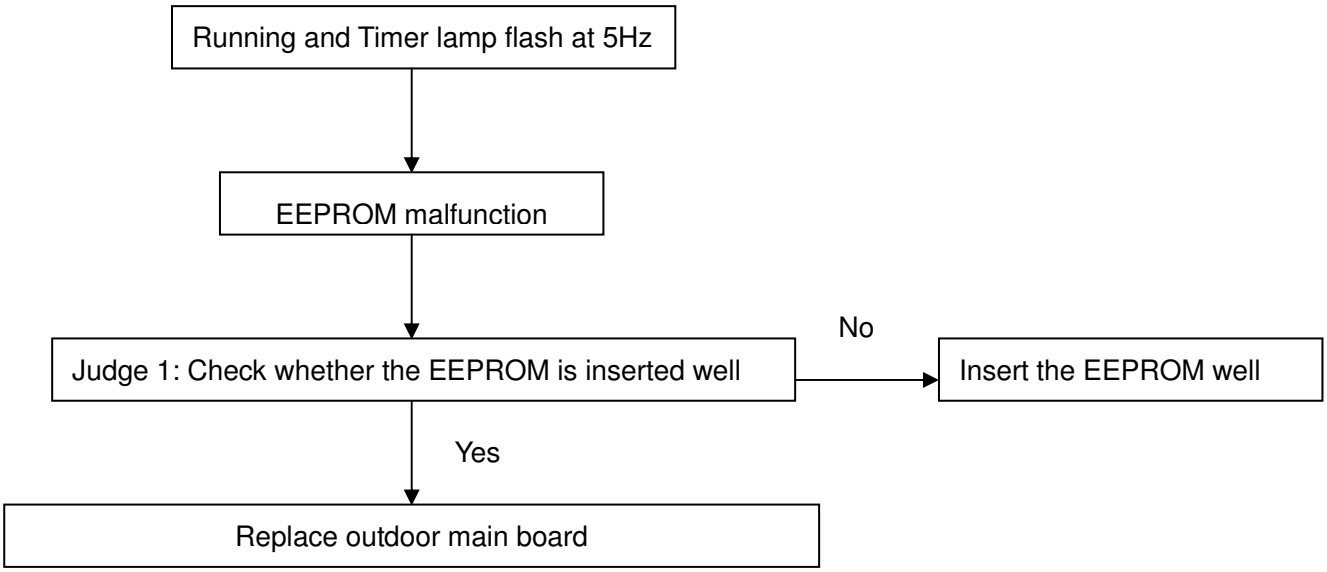
2. Defrosting lamp flash at 5Hz


Defrosting lamp flash at 5Hz
Judge: Evaporator temp. sensor is abnormal
Validate: Check whether the resistance of the temp. sensor is correct according to Annex 1
No
Replace room temp. sensor
Yes
Replace indoor PCB

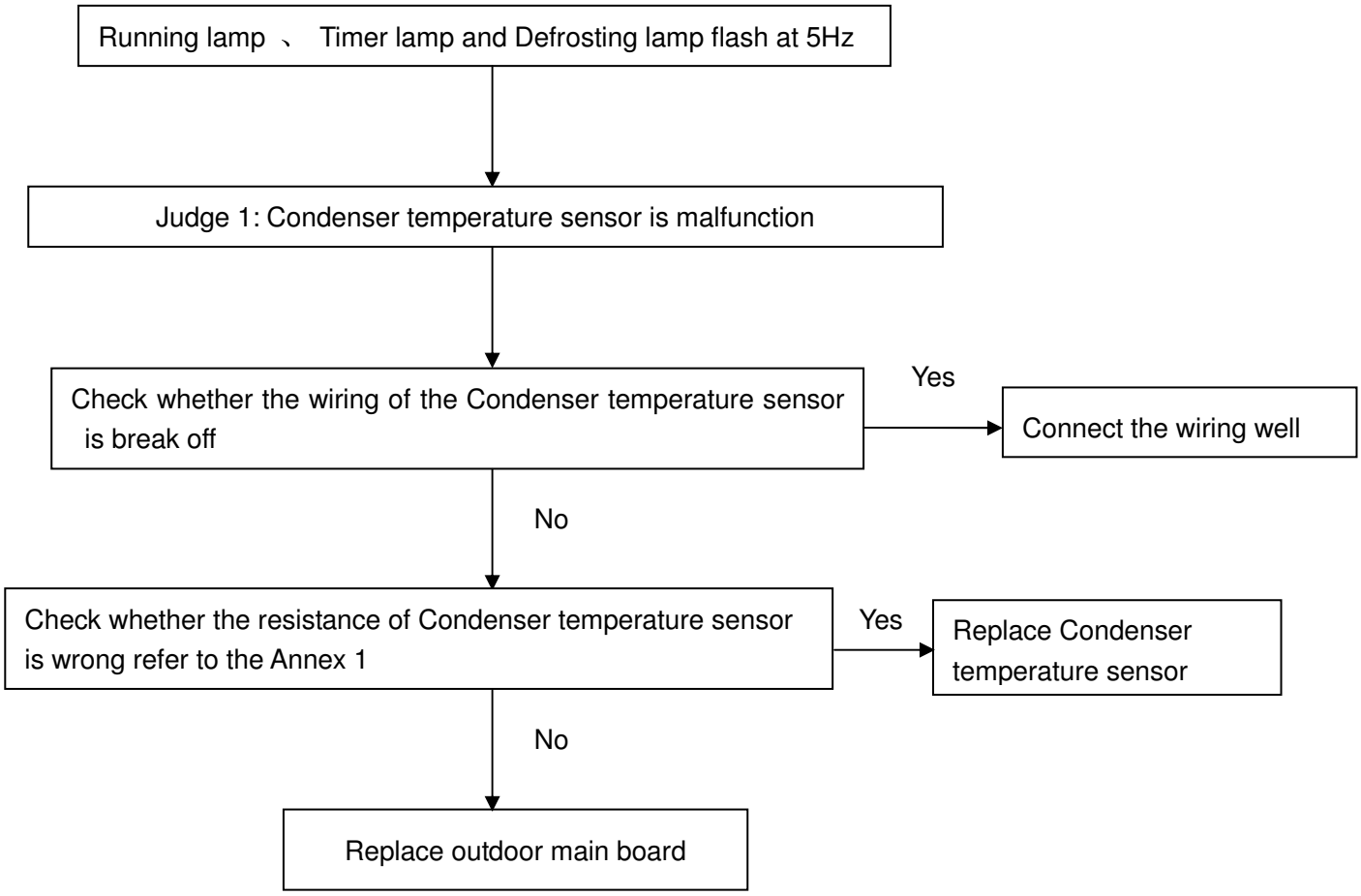
3. Timer lamp flash at 5Hz


Timer lamp flash at 5Hz
Communication malfunction between indoor/outdoor units
Judge 1: Check whether the indoor unit power is on
No
Turn on the indoor unit power
Yes
Judge 2: Check whether the signal wiring is shield cable or whether the shield cable is earthing
No
Adopt the shield cable/ shield cable earthing
Yes
Judge 3: Check whether the signal wiring between the indoor and outdoor units is wrong polarity?
Yes
Connect the signal wiring correctly
Judge 4: Check whether the signal wiring between the indoor and outdoor units is broken?
Yes
Replace the broken wiring
No
Indoor or outdoor main board is broken, replace the main board until the malfunction is disappear

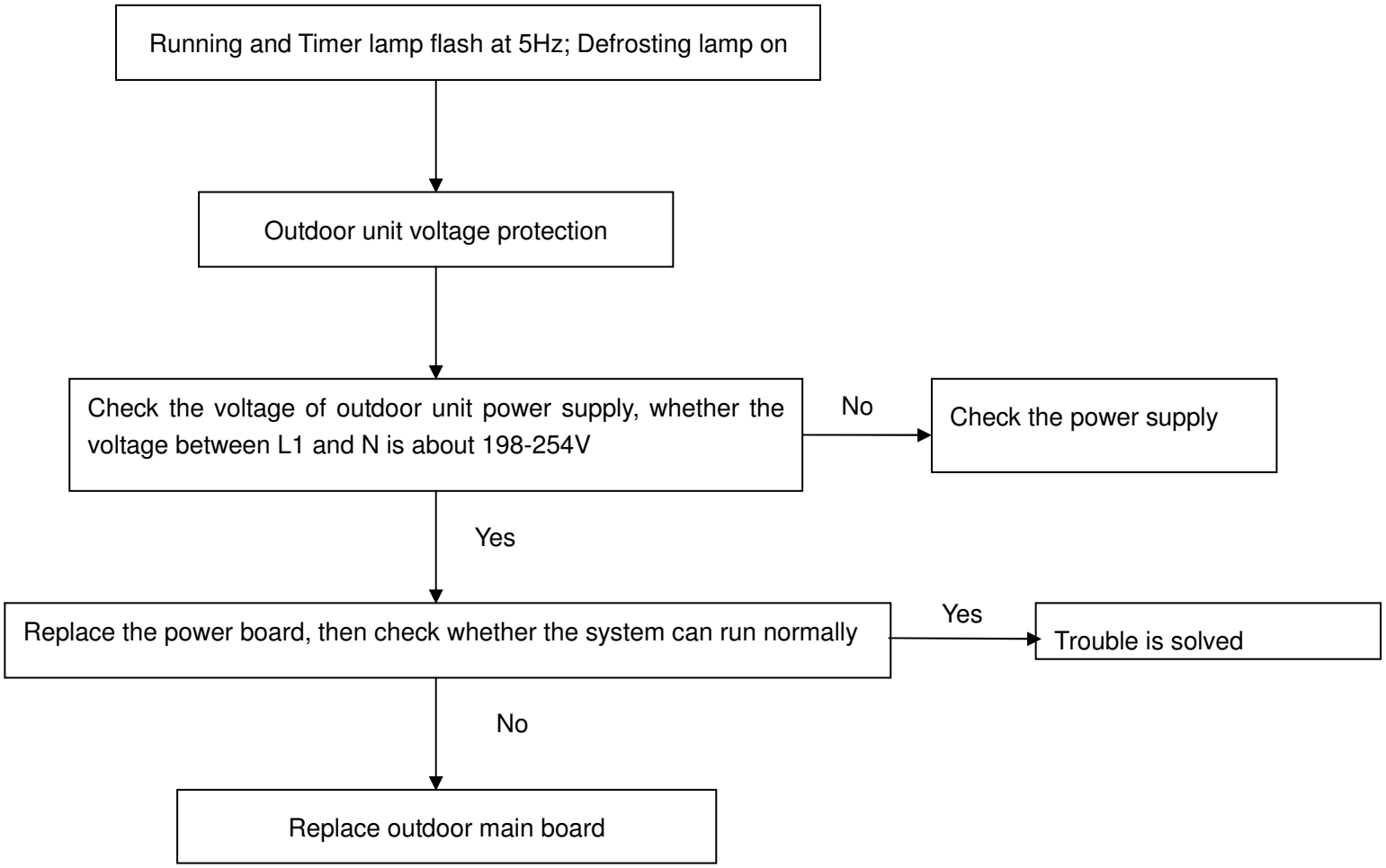
4. Running and Timer lamp flash at 5Hz


Running and Timer lamp flash at 5Hz
EEPROM malfunction
Judge 1: Check whether the EEPROM is inserted well
No
Insert the EEPROM well
Yes
Replace outdoor main board

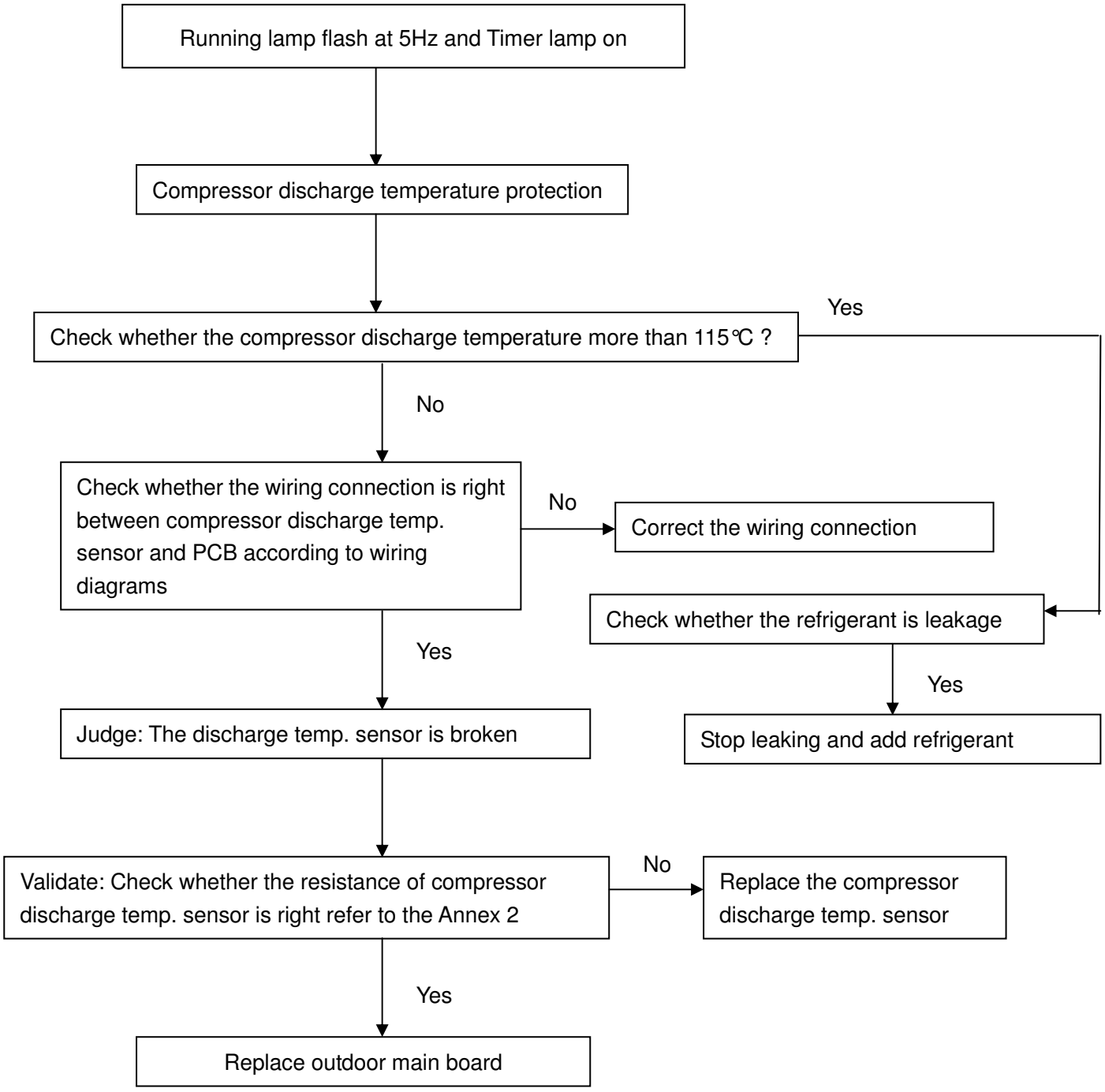
5. Running lamp 、 Timer lamp and Defrosting lamp flash at 5Hz:


Running lamp 、 Timer lamp and Defrosting lamp flash at 5Hz
Judge 1: Condenser temperature sensor is malfunction
Check whether the wiring of the Condenser temperature sensor is break off
Yes
Connect the wiring well
No
Check whether the resistance of Condenser temperature sensor is wrong refer to the Annex 1
Yes
Replace Condenser temperature sensor
No
Replace outdoor main board

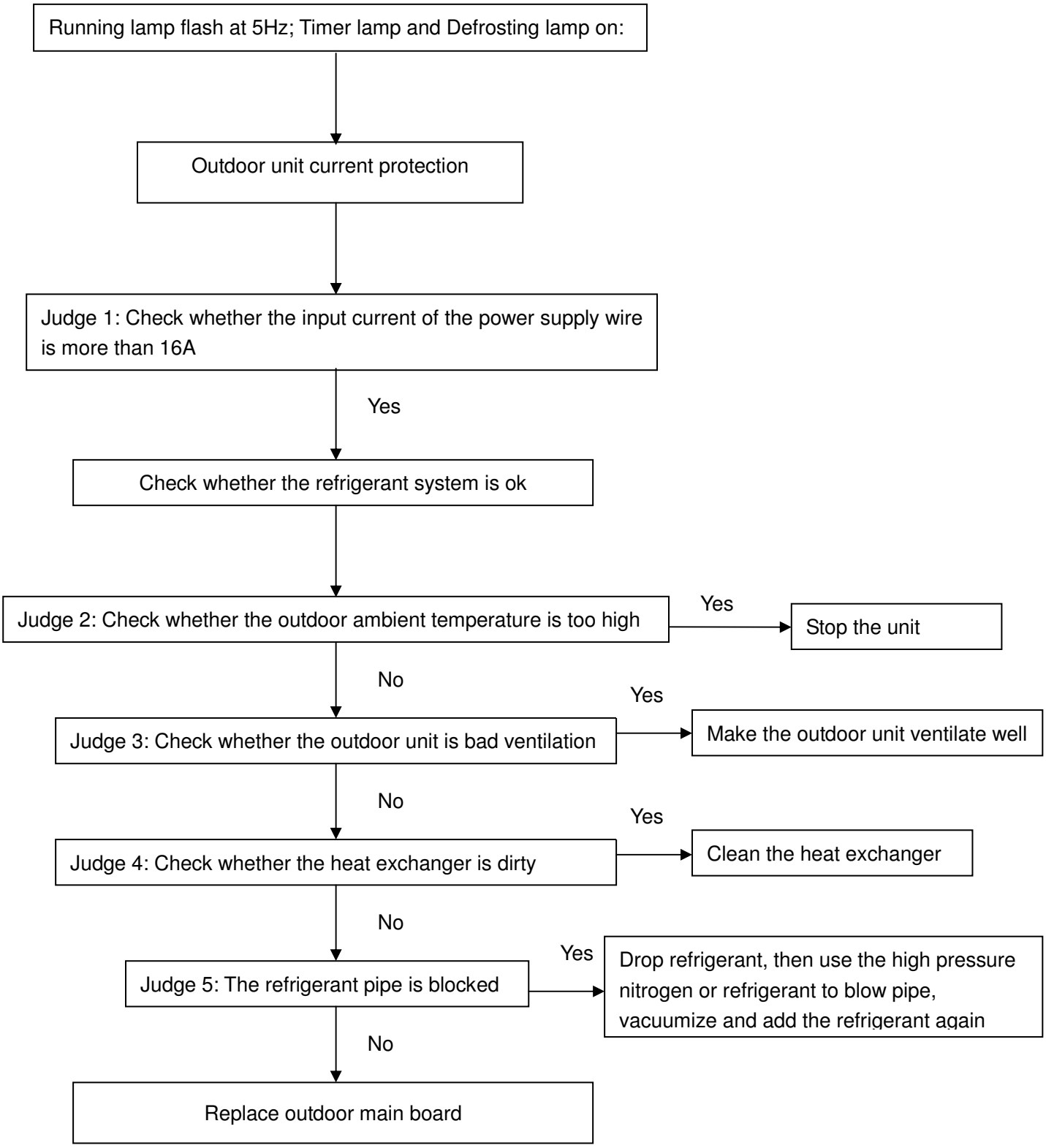
6. Running and Timer lamp flash at 5Hz; Defrosting lamp on;


Running and Timer lamp flash at 5Hz; Defrosting lamp on
Outdoor unit voltage protection
Check the voltage of outdoor unit power supply, whether the voltage between L1 and N is about 198-254V
No
Check the power supply
Yes
Replace the power board, then check whether the system can run normally
Yes
Trouble is solved
No
Replace outdoor main board

7. Running lamp flash at 5Hz and defrosting lamp on:

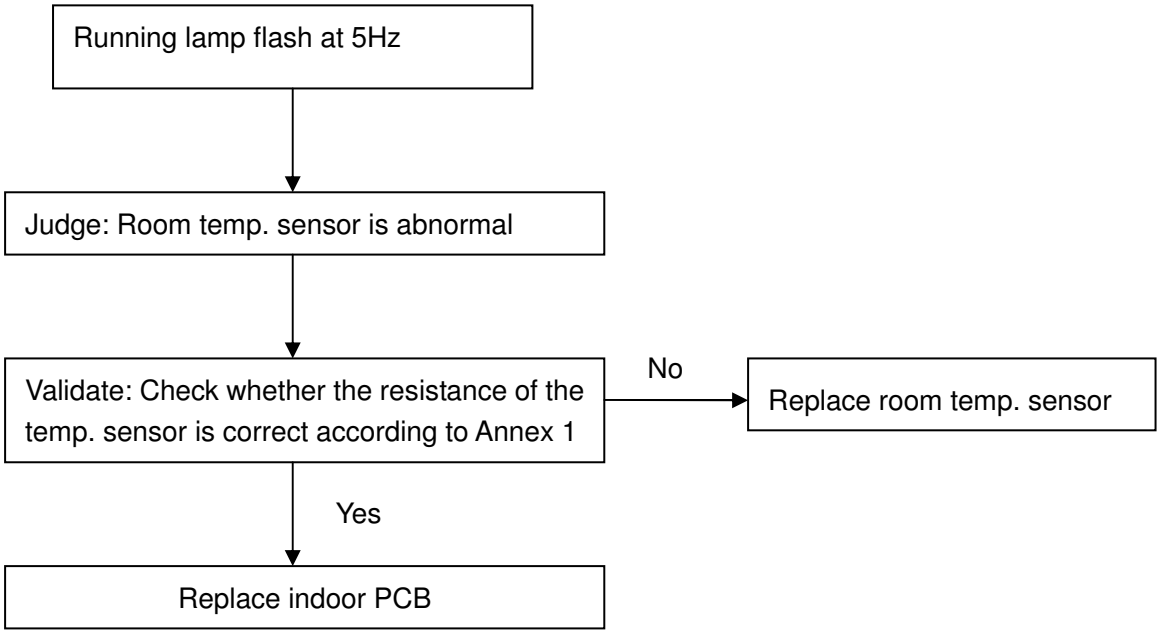

Running lamp flash at 5Hz and Timer lamp on
Compressor discharge temperature protection
Check whether the compressor discharge temperature more than 115℃ ?
Yes
No
Check whether the wiring connection is right between compressor discharge temp. sensor and PCB according to wiring diagrams
No
Correct the wiring connection
Check whether the refrigerant is leakage
Yes
Yes
Judge: The discharge temp. sensor is broken
Stop leaking and add refrigerant
Validate: Check whether the resistance of compressor discharge temp. sensor is right refer to the Annex 2
No
Replace the compressor discharge temp. sensor
Yes
Replace outdoor main board

8. Running lamp flash at 5Hz; Timer lamp and Defrosting lamp on:

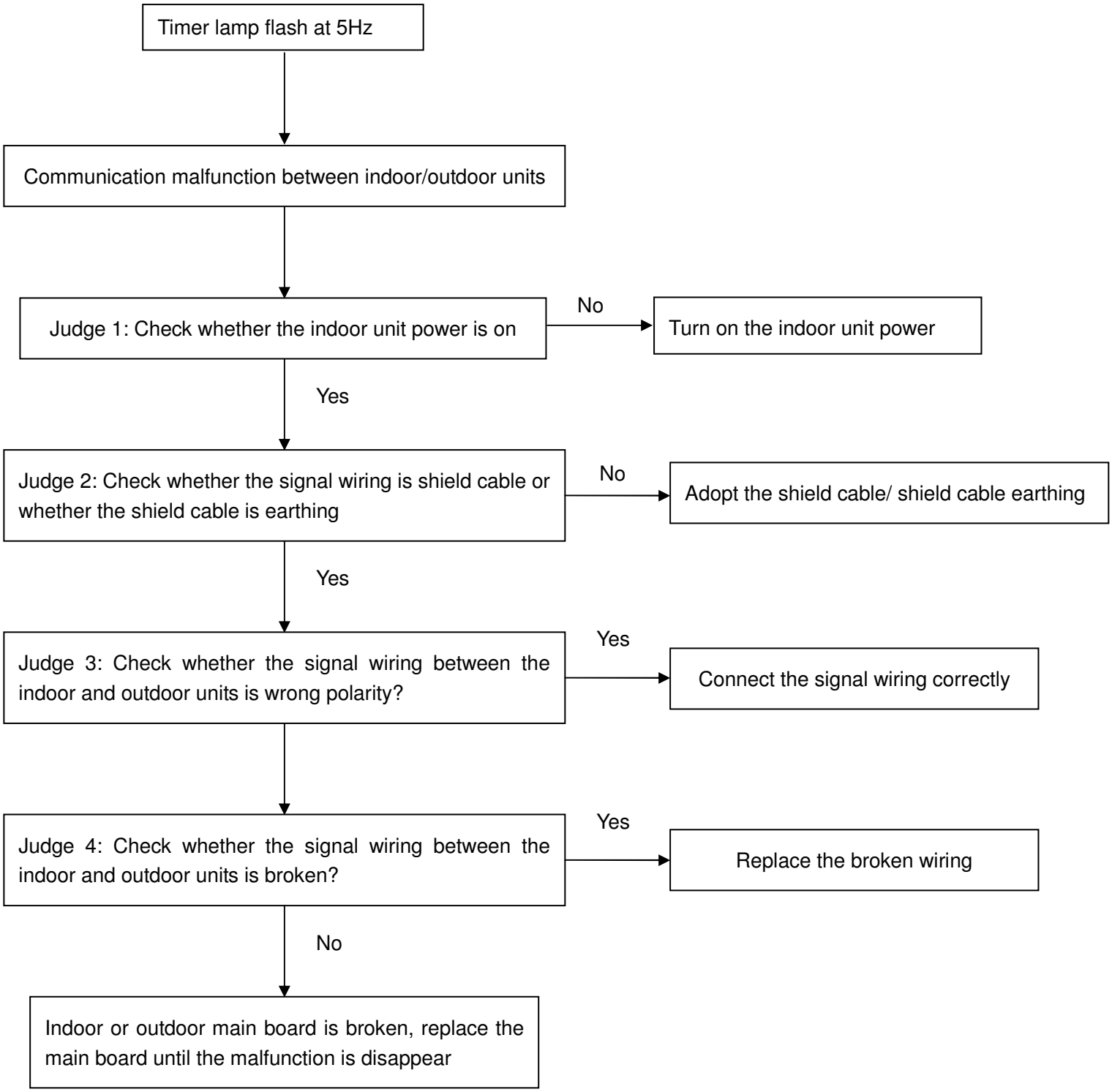

Running lamp flash at 5Hz; Timer lamp and Defrosting lamp on:
Outdoor unit current protection
Judge 1: Check whether the input current of the power supply wire is more than 16A
Yes
Check whether the refrigerant system is ok
Judge 2: Check whether the outdoor ambient temperature is too high
Yes
Stop the unit
No
Judge 3: Check whether the outdoor unit is bad ventilation
Yes
Make the outdoor unit ventilate well
No
Judge 4: Check whether the heat exchanger is dirty
Yes
Clean the heat exchanger
No
Judge 5: The refrigerant pipe is blocked
Yes
Drop refrigerant, then use the high pressure nitrogen or refrigerant to blow pipe, vacuumize and add the refrigerant again
No
Replace outdoor main board

◆ **CONo 50INV**

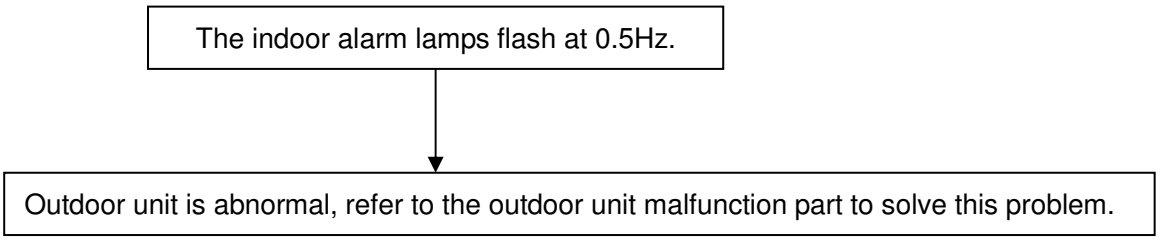
1. Running lamp flash at 5Hz


Running lamp flash at 5Hz
Judge: Room temp. sensor is abnormal
Validate: Check whether the resistance of the temp. sensor is correct according to Annex 1
No
Replace room temp. sensor
Yes
Replace indoor PCB

2. Timer lamp flash at 5Hz


Timer lamp flash at 5Hz
Communication malfunction between indoor/outdoor units
Judge 1: Check whether the indoor unit power is on
No
Turn on the indoor unit power
Yes
Judge 2: Check whether the signal wiring is shield cable or whether the shield cable is earthing
No
Adopt the shield cable/ shield cable earthing
Yes
Judge 3: Check whether the signal wiring between the indoor and outdoor units is wrong polarity?
Yes
Connect the signal wiring correctly
Judge 4: Check whether the signal wiring between the indoor and outdoor units is broken?
Yes
Replace the broken wiring
No
Indoor or outdoor main board is broken, replace the main board until the malfunction is disappear

3. Defrosting lamp flash at 0.5Hz


The indoor alarm lamps flash at 0.5Hz.
Outdoor unit is abnormal, refer to the outdoor unit malfunction part to solve this problem.

9.2 Outdoor unit 18000Btu/h malfunctions:

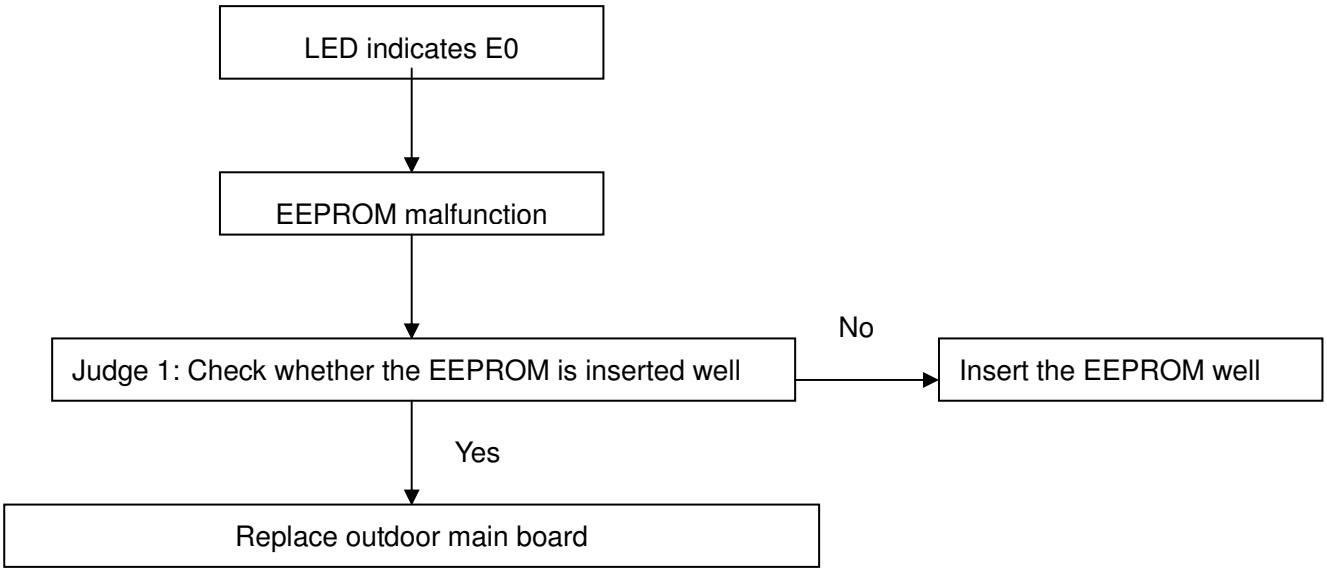
Display	Malfunction or Protection
E0	EEPROM malfunction
E2	Communication malfunction between indoor/outdoor units
E3	Communication malfunction in outdoor PCB
E4	Outdoor temperature sensors malfunction
E5	Compressor voltage protection
P0	Compressor top temp. protection
P1	High pressure protection
P2	Low pressure protection
P3	Compressor current protection
P4	Compressor discharge temperature protection
P5	Condenser high temperature protection
P6	IPM protection

Note：

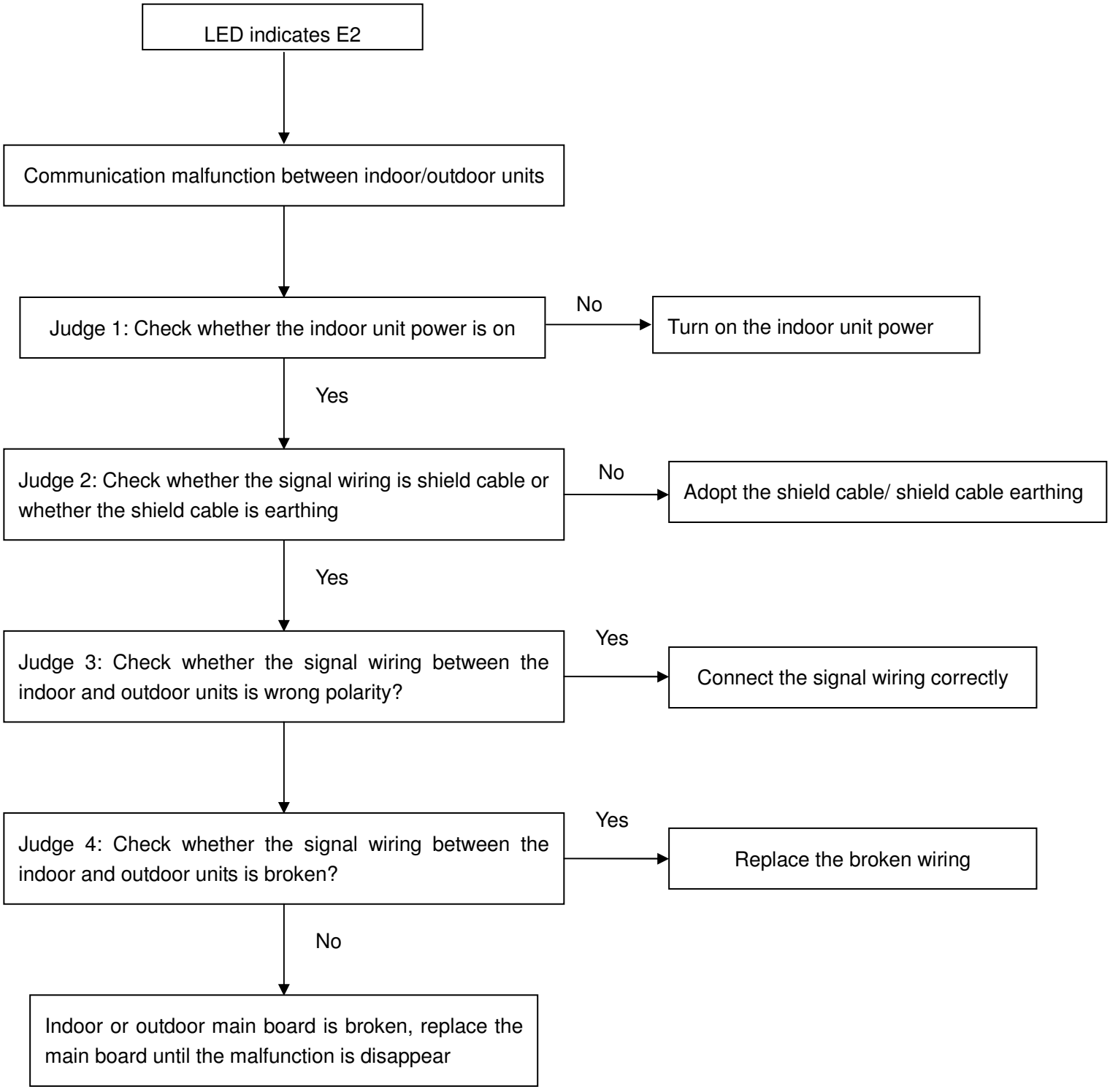
12000Btu/h: Its malfunctions are displayed on the indoor units' indicator.

18000Btu/h: Its malfunctions are displayed on the outdoor units' digital tube.

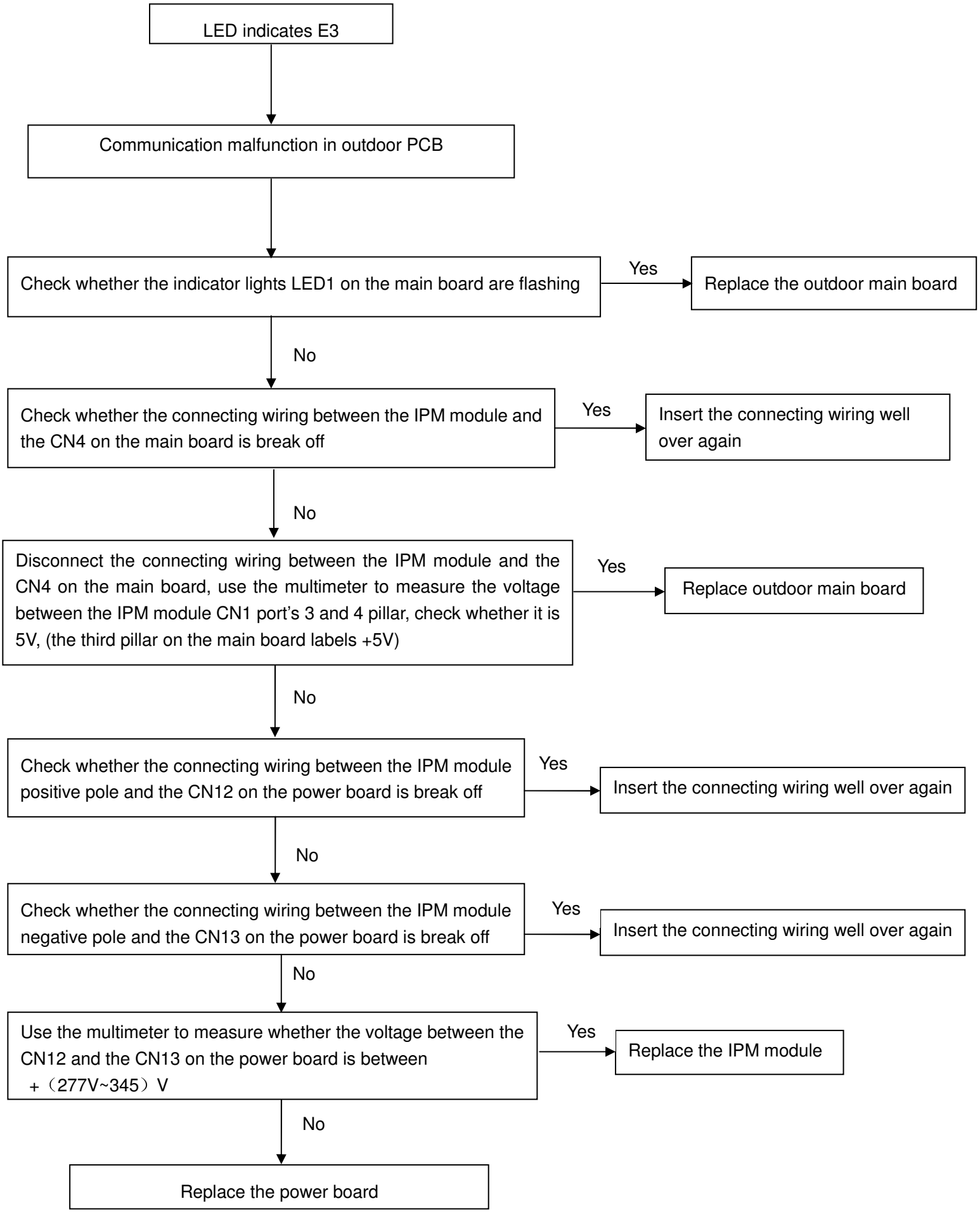
1. E0 malfunction



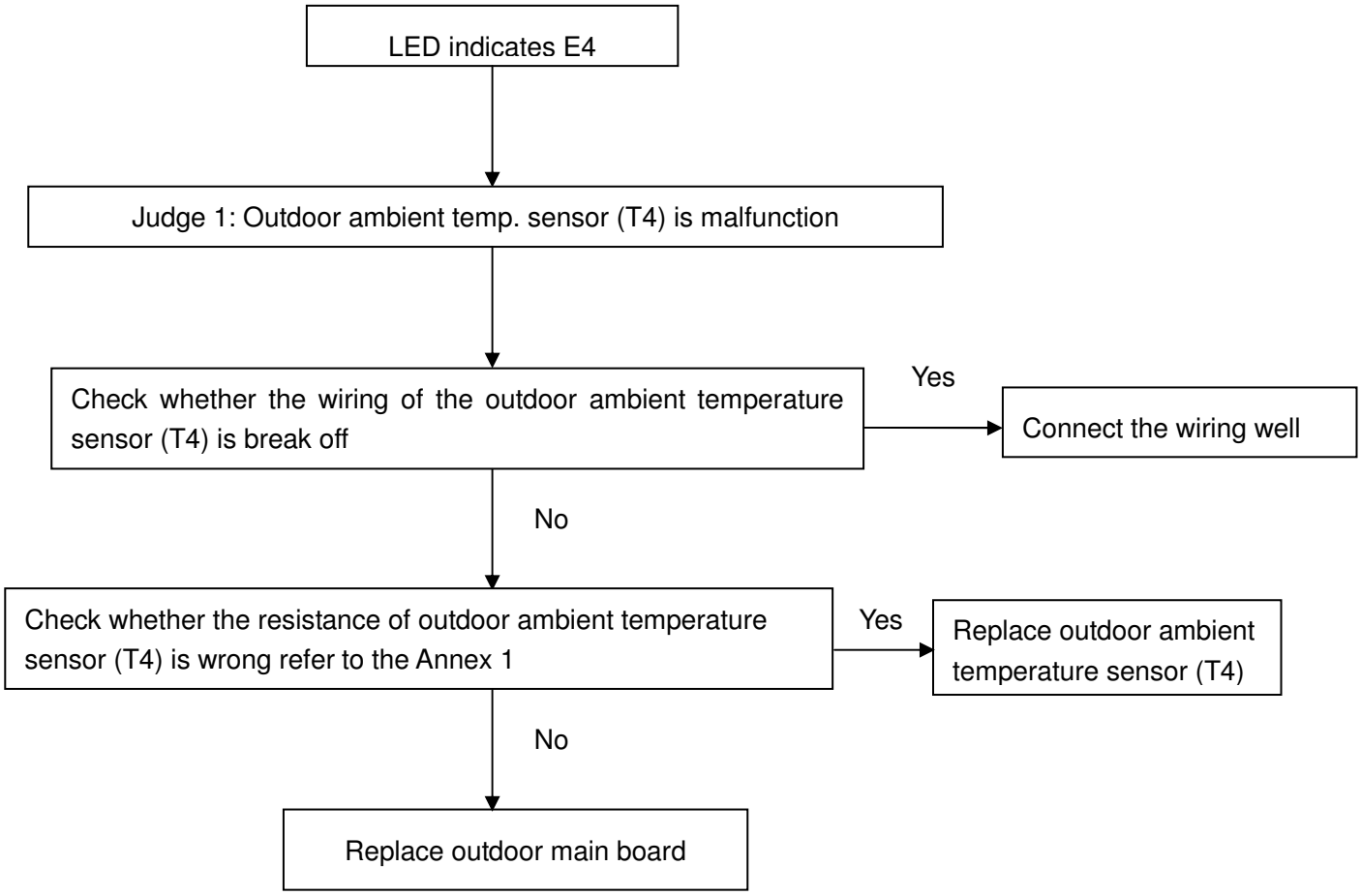
2. E2 malfunction


LED indicates E2
Communication malfunction between indoor/outdoor units
Judge 1: Check whether the indoor unit power is on
No
Turn on the indoor unit power
Yes
Judge 2: Check whether the signal wiring is shield cable or whether the shield cable is earthing
No
Adopt the shield cable/ shield cable earthing
Yes
Judge 3: Check whether the signal wiring between the indoor and outdoor units is wrong polarity?
Yes
Connect the signal wiring correctly
Judge 4: Check whether the signal wiring between the indoor and outdoor units is broken?
Yes
Replace the broken wiring
No
Indoor or outdoor main board is broken, replace the main board until the malfunction is disappear

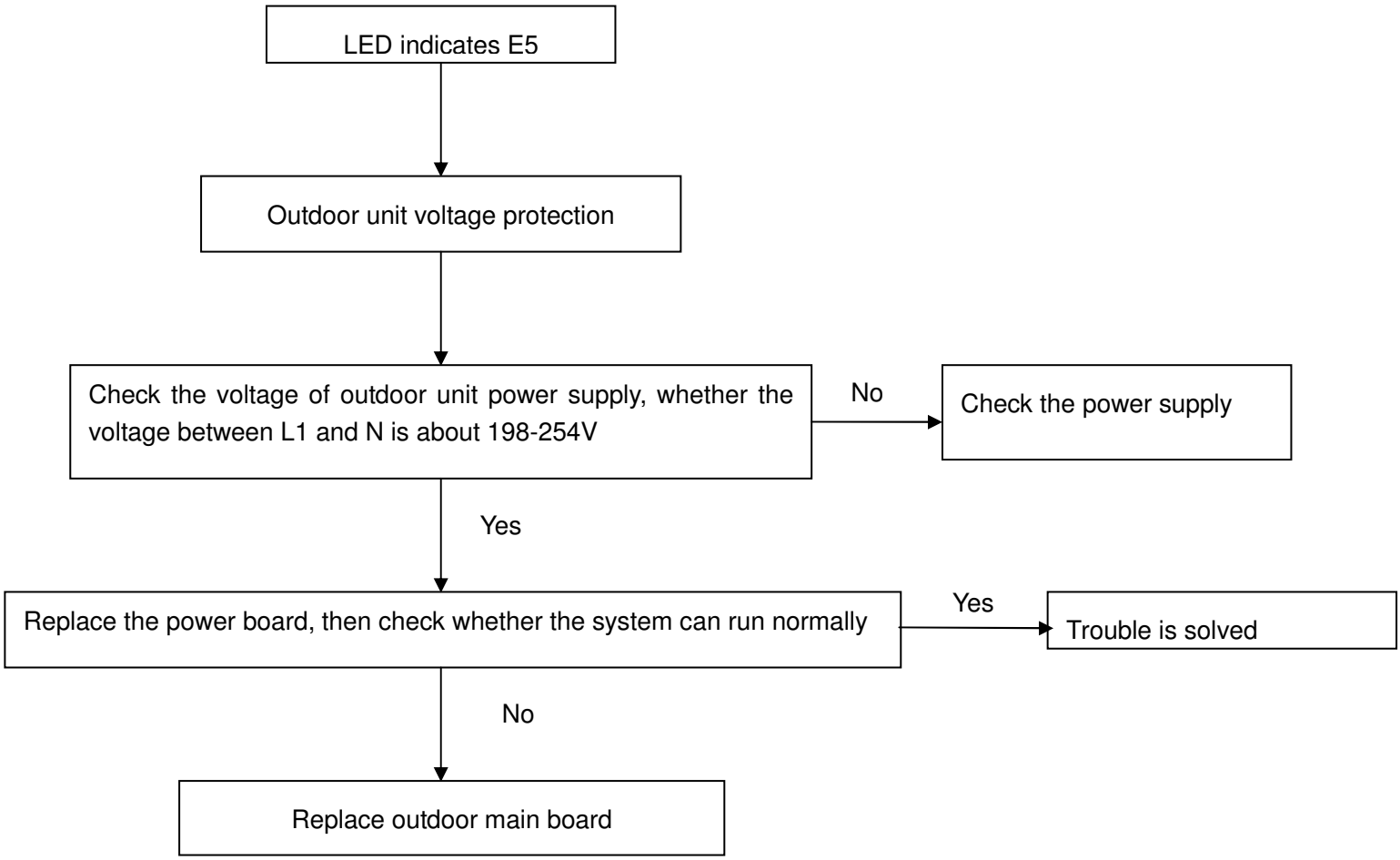
3. E3 malfunction


LED indicates E3
Communication malfunction in outdoor PCB
Check whether the indicator lights LED1 on the main board are flashing
Yes
Replace the outdoor main board
No
Check whether the connecting wiring between the IPM module and the CN4 on the main board is break off
Yes
Insert the connecting wiring well over again
No
Disconnect the connecting wiring between the IPM module and the CN4 on the main board, use the multimeter to measure the voltage between the IPM module CN1 port's 3 and 4 pillar, check whether it is 5V, (the third pillar on the main board labels +5V)
Yes
Replace outdoor main board
No
Check whether the connecting wiring between the IPM module positive pole and the CN12 on the power board is break off
Yes
Insert the connecting wiring well over again
No
Check whether the connecting wiring between the IPM module negative pole and the CN13 on the power board is break off
Yes
Insert the connecting wiring well over again
No
Use the multimeter to measure whether the voltage between the CN12 and the CN13 on the power board is between +（277V~345）V
Yes
Replace the IPM module
No
Replace the power board

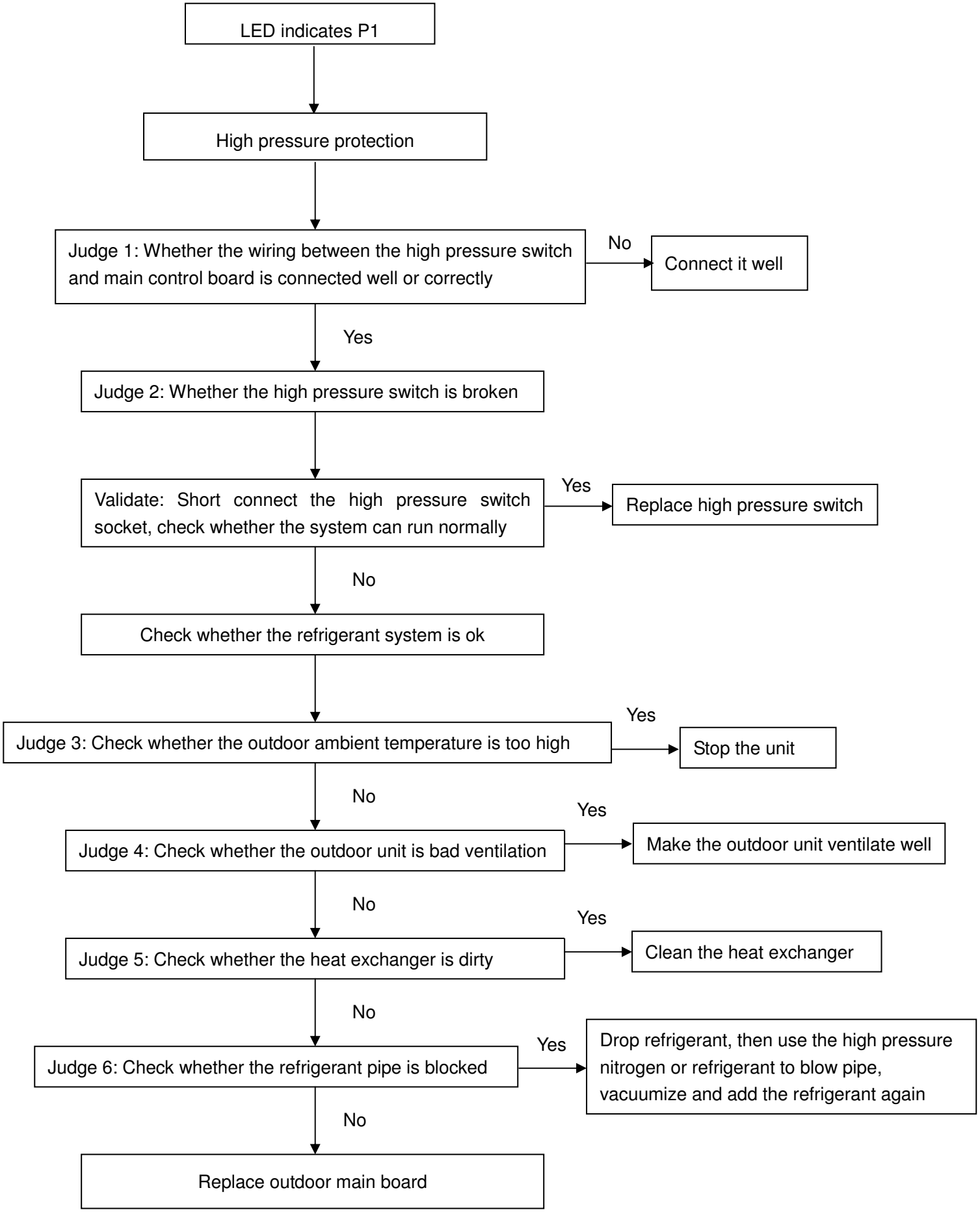
4. E4 malfunction


LED indicates E4
Judge 1: Outdoor ambient temp. sensor (T4) is malfunction
Check whether the wiring of the outdoor ambient temperature sensor (T4) is break off
Yes
Connect the wiring well
No
Check whether the resistance of outdoor ambient temperature sensor (T4) is wrong refer to the Annex 1
Yes
Replace outdoor ambient temperature sensor (T4)
No
Replace outdoor main board

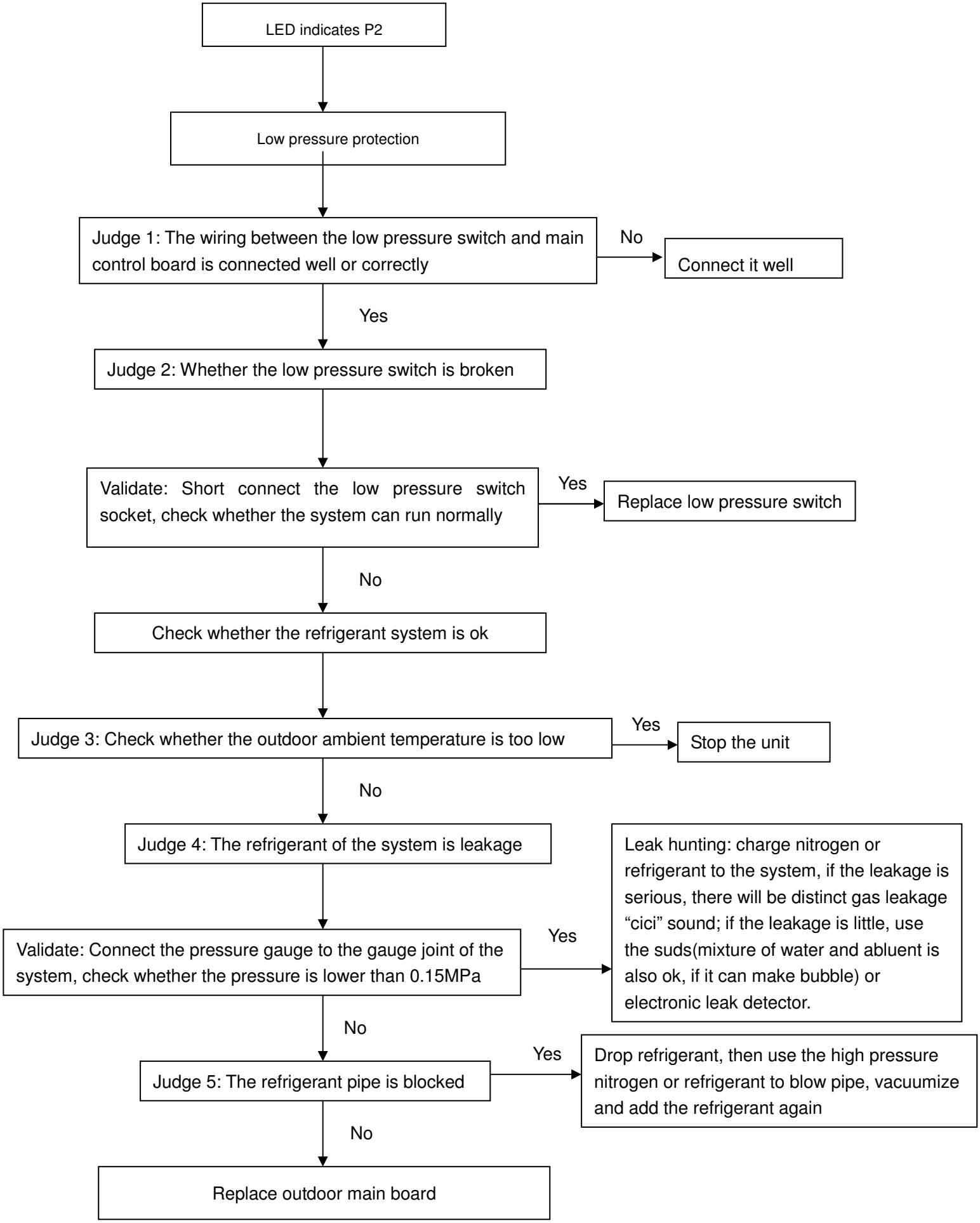
5. E5 malfunction


LED indicates E5
Outdoor unit voltage protection
Check the voltage of outdoor unit power supply, whether the voltage between L1 and N is about 198-254V
No
Check the power supply
Yes
Replace the power board, then check whether the system can run normally
Yes
Trouble is solved
No
Replace outdoor main board

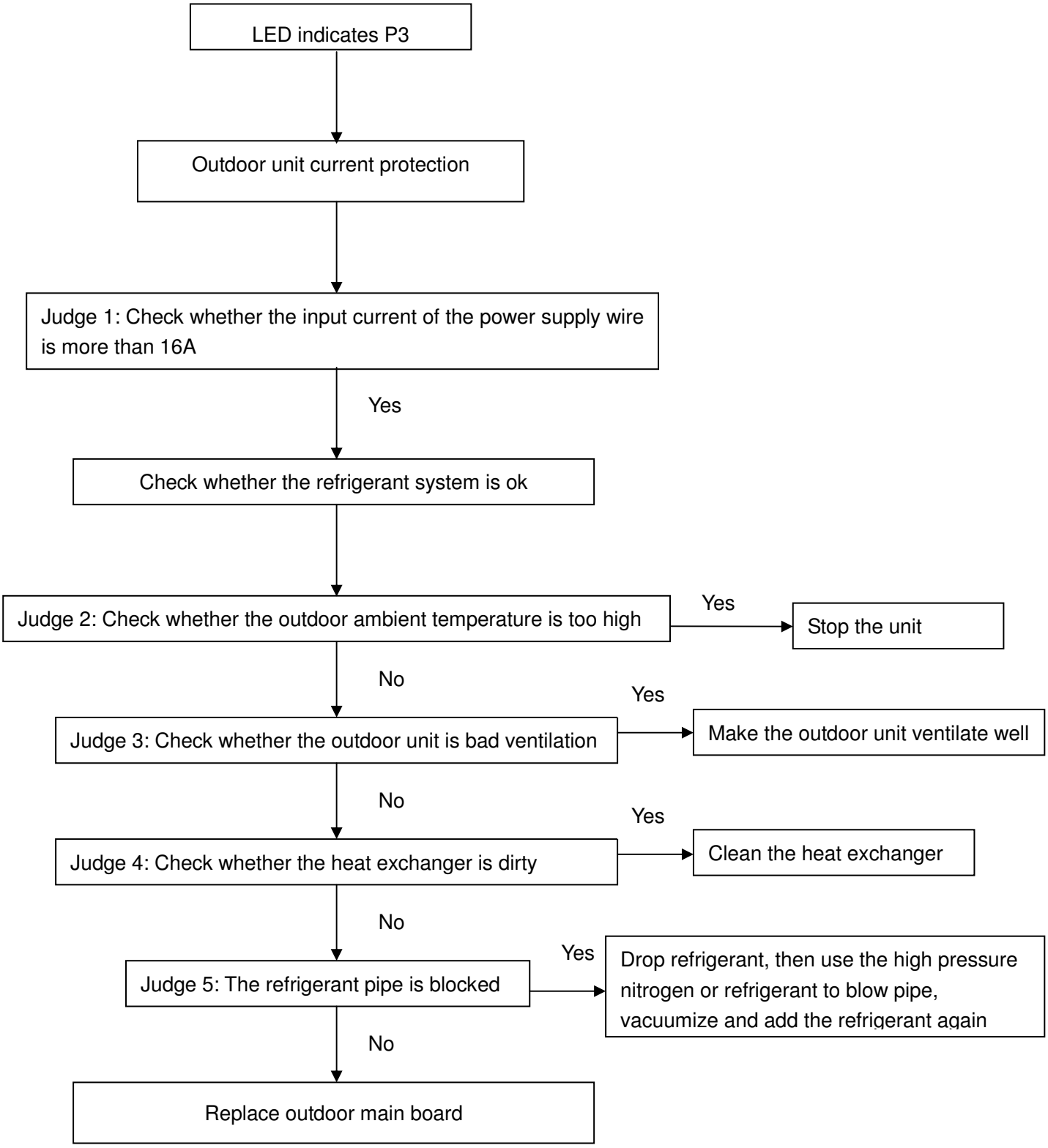
6. P1 malfunction


LED indicates P1
High pressure protection
Judge 1: Whether the wiring between the high pressure switch and main control board is connected well or correctly
No
Connect it well
Yes
Judge 2: Whether the high pressure switch is broken
Validate: Short connect the high pressure switch socket, check whether the system can run normally
Yes
Replace high pressure switch
No
Check whether the refrigerant system is ok
Judge 3: Check whether the outdoor ambient temperature is too high
Yes
Stop the unit
No
Judge 4: Check whether the outdoor unit is bad ventilation
Yes
Make the outdoor unit ventilate well
No
Judge 5: Check whether the heat exchanger is dirty
Yes
Clean the heat exchanger
No
Judge 6: Check whether the refrigerant pipe is blocked
Yes
Drop refrigerant, then use the high pressure nitrogen or refrigerant to blow pipe, vacuumize and add the refrigerant again
No
Replace outdoor main board

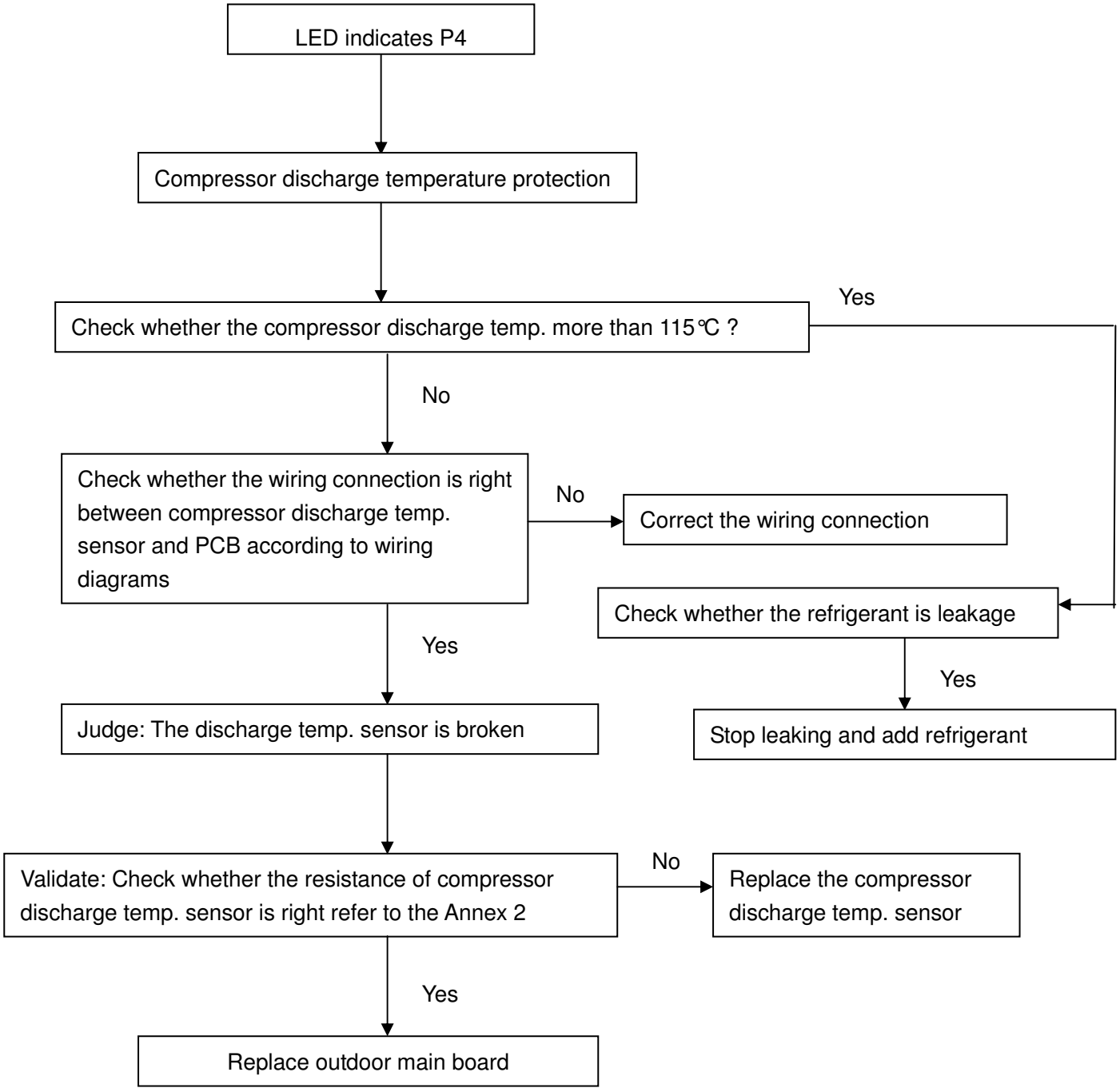
7. P2 malfunction


LED indicates P2
Low pressure protection
Judge 1: The wiring between the low pressure switch and main control board is connected well or correctly
No
Connect it well
Yes
Judge 2: Whether the low pressure switch is broken
Validate: Short connect the low pressure switch socket, check whether the system can run normally
Yes
Replace low pressure switch
No
Check whether the refrigerant system is ok
Judge 3: Check whether the outdoor ambient temperature is too low
Yes
Stop the unit
No
Judge 4: The refrigerant of the system is leakage
Leak hunting: charge nitrogen or refrigerant to the system, if the leakage is serious, there will be distinct gas leakage “cici” sound; if the leakage is little, use the suds(mixture of water and abluent is also ok, if it can make bubble) or electronic leak detector.
Validate: Connect the pressure gauge to the gauge joint of the system, check whether the pressure is lower than 0.15MPa
Yes
No
Judge 5: The refrigerant pipe is blocked
Yes
Drop refrigerant, then use the high pressure nitrogen or refrigerant to blow pipe, vacuumize and add the refrigerant again
No
Replace outdoor main board

8. P3 malfunction


LED indicates P3
Outdoor unit current protection
Judge 1: Check whether the input current of the power supply wire is more than 16A
Yes
Check whether the refrigerant system is ok
Judge 2: Check whether the outdoor ambient temperature is too high
Yes
Stop the unit
No
Judge 3: Check whether the outdoor unit is bad ventilation
Yes
Make the outdoor unit ventilate well
No
Judge 4: Check whether the heat exchanger is dirty
Yes
Clean the heat exchanger
No
Judge 5: The refrigerant pipe is blocked
Yes
Drop refrigerant, then use the high pressure nitrogen or refrigerant to blow pipe, vacuumize and add the refrigerant again
No
Replace outdoor main board

9. P4 malfunction


LED indicates P4
Compressor discharge temperature protection
Check whether the compressor discharge temp. more than 115℃ ?
Yes
No
Check whether the wiring connection is right between compressor discharge temp. sensor and PCB according to wiring diagrams
No
Correct the wiring connection
Check whether the refrigerant is leakage
Yes
Stop leaking and add refrigerant
Yes
Judge: The discharge temp. sensor is broken
Validate: Check whether the resistance of compressor discharge temp. sensor is right refer to the Annex 2
No
Replace the compressor discharge temp. sensor
Yes
Replace outdoor main board

10. P5 malfunction

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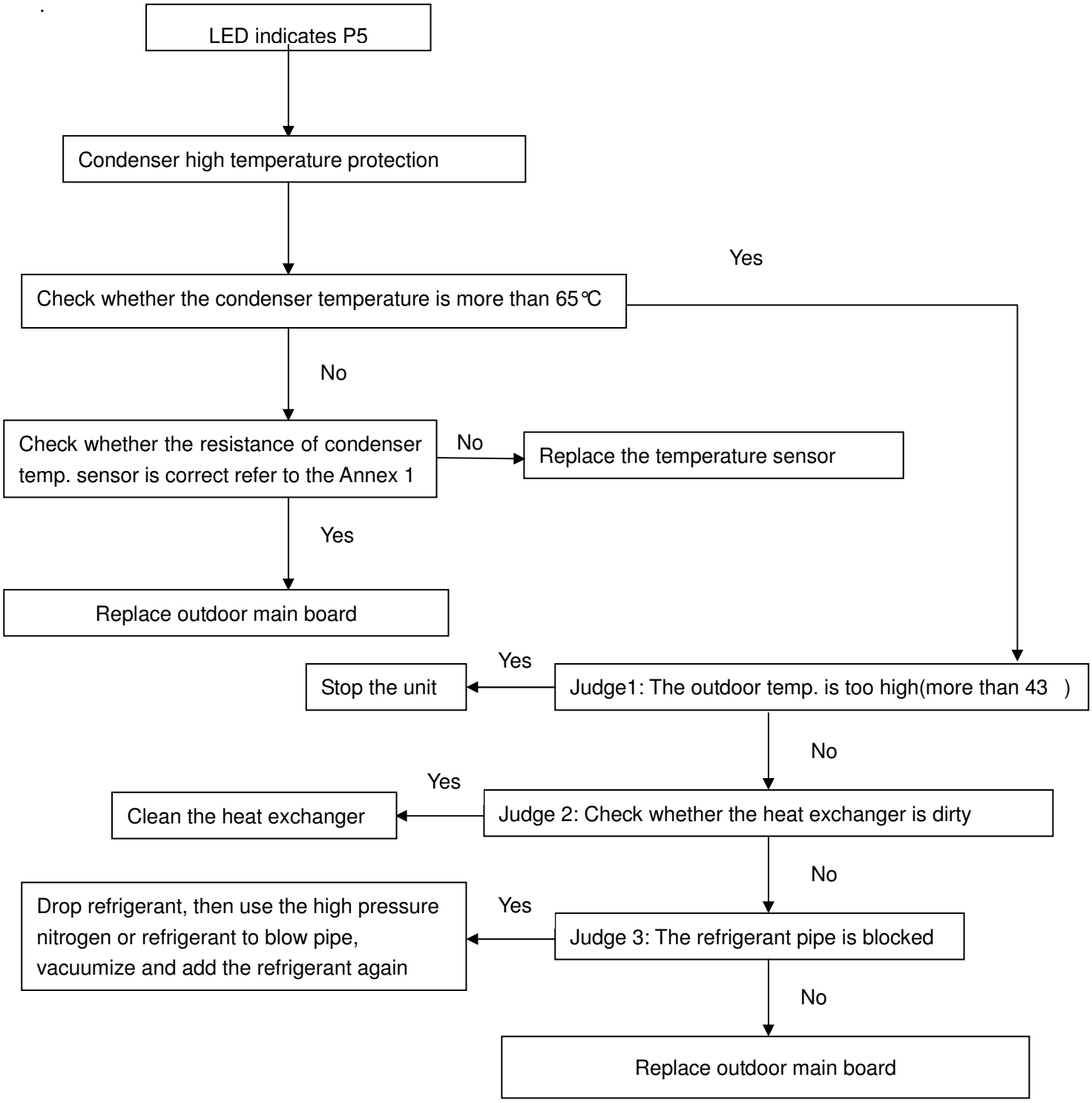
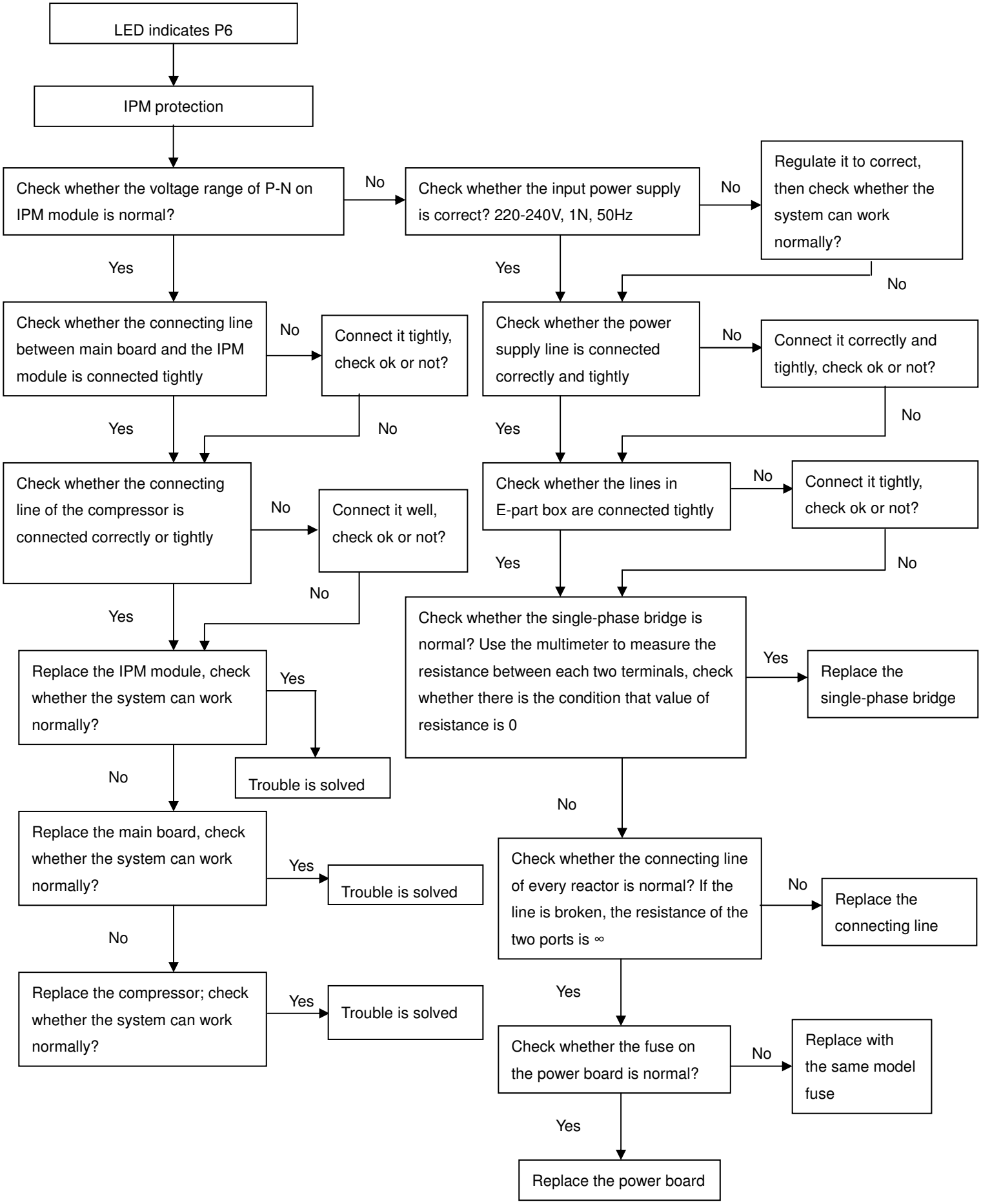

LED indicates P5
Condenser high temperature protection
Check whether the condenser temperature is more than 65℃
Yes
No
Check whether the resistance of condenser temp. sensor is correct refer to the Annex 1
No
Replace the temperature sensor
Yes
Replace outdoor main board
Yes
Stop the unit
Judge1: The outdoor temp. is too high(more than 43)
No
Yes
Clean the heat exchanger
Judge 2: Check whether the heat exchanger is dirty
No
Drop refrigerant, then use the high pressure nitrogen or refrigerant to blow pipe, vacuumize and add the refrigerant again
Yes
Judge 3: The refrigerant pipe is blocked
No
Replace outdoor main board

11. P6 malfunction


LED indicates P6
IPM protection
Check whether the voltage range of P-N on IPM module is normal?
No
Check whether the input power supply is correct? 220-240V, 1N, 50Hz
No
Regulate it to correct, then check whether the system can work normally?
Yes
Yes
No
Check whether the connecting line between main board and the IPM module is connected tightly
No
Connect it tightly, check ok or not?
Check whether the power supply line is connected correctly and tightly
No
Connect it correctly and tightly, check ok or not?
Yes
No
Yes
No
Check whether the connecting line of the compressor is connected correctly or tightly
No
Connect it well, check ok or not?
Check whether the lines in E-part box are connected tightly
No
Connect it tightly, check ok or not?
No
Yes
No
Yes
Check whether the single-phase bridge is normal? Use the multimeter to measure the resistance between each two terminals, check whether there is the condition that value of resistance is 0
Yes
Replace the single-phase bridge
Replace the IPM module, check whether the system can work normally?
Yes
Trouble is solved
No
No
Replace the main board, check whether the system can work normally?
Yes
Trouble is solved
Check whether the connecting line of every reactor is normal? If the line is broken, the resistance of the two ports is ∞
No
Replace the connecting line
No
Yes
Replace the compressor; check whether the system can work normally?
Yes
Trouble is solved
Check whether the fuse on the power board is normal?
No
Replace with the same model fuse
Yes
Replace the power board

Annex 1

Temp	Resistance（KΩ）			Resist.tol %		Temp.tol℃	
（μ）	Rmax	R（t）Normal	Rmin	MAX(+)	MIN(-)	MAX(+)	MIN(-)
-20	116.539	106.732	96.920	9.19	9.19	1.59	1.59
-19	110.231	100.552	91.451	9.63	9.05	1.57	1.57
-18	103.743	94.769	86.328	9.47	8.91	1.56	1.55
-17	97.673	89.353	81.525	9.31	8.76	1.54	1.54
-16	91.990	84.278	77.017	9.15	8.62	1.53	1.52
-15	86.669	79.521	72.788	8.99	8.47	1.51	1.50
-14	81.684	75.059	68.815	8.83	8.32	1.49	1.48
-13	77.013	70.873	65.083	8.66	8.17	1.47	1.47
-12	72.632	66.943	61.574	8.50	8.02	1.45	1.45
-11	68.523	63.252	58.274	8.33	7.87	1.44	1.43
-10	64.668	59.784	55.169	8.17	7.72	1.42	1.41
-9	61.048	56.524	52.246	8.00	7.57	1.40	1.39
-8	57.649	53.458	49.492	7.84	7.42	1.38	1.37
-7	54.456	50.575	46.899	7.67	7.27	1.35	1.35
-6	51.456	47.862	44.455	7.51	7.12	1.33	1.32
-5	48.636	45.308	42.150	7.35	6.97	1.31	1.30
-4	45.984	42.903	39.977	7.18	6.82	1.29	1.28
-3	43.490	40.638	37.927	7.02	6.67	1.27	1.26
-2	41.144	38.504	35.992	6.86	6.52	1.25	1.24
-1	38.935	36.492	34.165	6.70	6.38	1.23	1.21
0	36.857	34.596	32.440	6.53	6.23	1.21	1.19
1	34.898	32.807	30.810	6.38	6.09	1.18	1.17
2	33.055	31.120	29.271	6.22	5.94	1.16	1.15
3	31.317	29.528	27.815	6.06	5.80	1.14	1.12
4	29.681	28.026	26.440	5.90	5.66	1.12	1.10
5	28.138	26.608	25.140	5.75	5.52	1.10	1.08
6	26.682	25.268	23.909	5.60	5.38	1.07	1.06
7	25.310	24.003	22.745	5.45	5.24	1.05	1.03
8	24.016	22.808	21.644	5.30	5.10	1.03	1.01
9	22.794	21.678	20.601	5.15	4.97	1.01	0.99
10	21.641	20.610	19.614	5.00	4.83	0.99	0.97
11	20.553	19.601	18.680	4.86	4.70	0.96	0.94
12	19.525	18.646	17.794	4.71	4.57	0.94	0.92
13	18.554	17.743	16.955	4.57	4.44	0.92	0.90
14	17.636	16.888	16.160	4.43	4.31	0.90	0.88
15	16.769	16.079	15.406	4.29	4.19	0.88	0.85
16	15.949	15.313	14.691	4.15	4.06	0.86	0.83
17	15.174	14.588	14.014	4.02	3.94	0.84	0.81
18	14.442	13.902	13.372	3.89	3.81	0.81	0.79
19	13.748	13.251	12.762	3.75	3.69	0.79	0.76
20	13.093	12.635	12.183	3.62	3.57	0.77	0.74

21	12.471	12.050	11.634	3.50	3.46	0.75	0.72
22	11.883	11.496	11.112	3.37	3.34	0.73	0.70
23	11.327	10.971	10.617	3.25	3.23	0.71	0.68
24	10.800	10.473	10.147	3.12	3.11	0.69	0.66
25	10.300	10.000	9.700	3.00	3.00	0.67	0.63
26	9.848	9.551	9.255	3.11	3.10	0.69	0.66
27	9.418	9.125	8.834	3.21	3.19	0.72	0.69
28	9.010	8.721	8.434	3.31	3.29	0.75	0.71
29	8.621	8.337	8.055	3.41	3.38	0.77	0.74
30	8.252	7.972	7.695	3.51	3.47	0.80	0.77
31	7.900	7.625	7.353	3.61	3.57	0.83	0.79
32	7.566	7.296	7.029	3.70	3.66	0.85	0.82
33	7.247	6.982	6.721	3.80	3.74	0.88	0.84
34	6.944	6.684	6.428	3.89	3.83	0.91	0.87
35	6.656	6.401	6.150	3.98	3.92	0.93	0.90
36	6.381	6.131	5.886	4.08	4.00	0.96	0.93
37	6.119	5.874	5.634	4.17	4.09	0.98	0.95
38	5.870	5.630	5.395	4.26	4.17	1.01	0.98
39	5.631	5.397	5.167	4.34	4.26	1.03	1.01
40	5.404	5.175	4.951	4.43	4.34	1.06	1.03
41	5.188	4.964	4.745	4.52	4.42	1.09	1.06
42	4.982	4.763	4.549	4.60	4.50	1.12	1.09
43	4.785	4.571	4.362	4.69	4.58	1.14	1.12
44	4.596	4.387	4.183	4.77	4.66	1.17	1.14
45	4.417	4.213	4.014	4.85	4.74	1.19	1.17
46	4.246	4.046	3.851	4.93	4.81	1.22	1.20
47	4.082	3.887	3.697	5.02	4.89	1.25	1.23
48	3.925	3.735	3.550	5.10	4.97	1.28	1.25
49	3.776	3.590	3.409	5.18	5.04	1.30	1.28
50	3.632	3.451	3.274	5.25	5.12	1.33	1.30
51	3.495	3.318	3.146	5.33	5.19	1.35	1.33
52	3.363	3.191	3.023	5.41	5.26	1.41	1.36
53	3.237	3.069	2.905	5.49	5.34	1.43	1.38
54	3.116	2.952	2.793	5.56	5.41	1.46	1.41
55	3.001	2.841	2.685	5.64	5.48	1.48	1.44
56	2.890	2.734	2.582	5.71	5.55	1.51	1.46
57	2.784	2.632	2.484	5.79	5.62	1.54	1.49
58	2.682	2.534	2.390	5.86	5.69	1.56	1.52
59	2.585	2.440	2.299	5.93	5.76	1.59	1.54
60	2.491	2.350	2.213	6.01	5.83	1.62	1.57
61	2.401	2.264	2.130	6.08	5.90	1.64	1.60
62	2.315	2.181	2.051	6.15	5.96	1.67	1.62
63	2.233	2.102	1.975	6.22	6.03	1.70	1.65
64	2.154	2.026	1.903	6.29	6.10	1.72	1.68
65	2.077	1.953	1.833	6.36	6.16	1.75	1.70
66	2.004	1.883	1.766	6.42	6.23	1.77	1.73
67	1.934	1.816	1.702	6.49	6.29	1.80	1.76
68	1.867	1.752	1.641	6.56	6.35	1.83	1.78
69	1.802	1.690	1.582	6.62	6.41	1.85	1.81
70	1.740	1.631	1.525	6.69	6.48	1.88	1.84
71	1.680	1.574	1.471	6.75	6.54	1.91	1.86
72	1.622	1.519	1.419	6.82	6.60	1.93	1.89

73	1.567	1.466	1.369	6.88	6.66	1.96	1.92
74	1.514	1.416	1.321	6.94	6.71	1.98	1.94
75	1.463	1.367	1.275	7.00	6.77	2.01	1.97
76	1.414	1.321	1.230	7.06	6.83	2.04	2.00
77	1.367	1.276	1.188	7.12	6.88	2.06	2.02
78	1.321	1.233	1.147	7.17	6.94	2.09	2.05
79	1.277	1.191	1.108	7.23	6.99	2.12	2.08
80	1.235	1.151	1.070	7.28	7.04	2.14	2.11
81	1.195	1.113	1.034	7.33	7.09	2.17	2.13
82	1.156	1.076	0.999	7.39	7.14	2.20	2.16
83	1.118	1.041	0.966	7.44	7.18	2.22	2.19
84	1.082	1.007	0.934	7.48	7.23	2.25	2.21
85	1.047	0.974	0.903	7.53	7.27	2.27	2.24
86	1.014	0.942	0.874	7.57	7.31	2.30	2.27
87	0.982	0.912	0.845	7.62	7.35	2.33	2.29
88	0.951	0.883	0.818	7.66	7.39	2.35	2.32
89	0.921	0.855	0.791	7.69	7.43	2.38	2.35
90	0.892	0.828	0.766	7.73	7.46	2.41	2.37
91	0.864	0.802	0.742	7.76	7.49	2.43	2.40
92	0.838	0.777	0.719	7.80	7.52	2.46	2.43
93	0.812	0.753	0.696	7.82	7.54	2.48	2.45
94	0.787	0.730	0.675	7.85	7.57	2.51	2.48
95	0.763	0.708	0.654	7.87	7.59	2.54	2.51
96	0.740	0.686	0.634	7.89	7.61	2.56	2.53
97	0.718	0.666	0.615	7.91	7.62	2.59	2.56
98	0.697	0.646	0.597	7.93	7.63	2.62	2.59
99	0.677	0.627	0.579	7.94	7.64	2.64	2.61
100	0.657	0.609	0.562	7.94	7.65	2.67	2.64
101	0.638	0.591	0.546	7.95	7.65	2.70	2.67
102	0.620	0.574	0.530	7.95	7.65	2.72	2.69
103	0.602	0.558	0.515	7.94	7.64	2.75	2.72
104	0.585	0.542	0.501	7.94	7.63	2.77	2.75
105	0.569	0.527	0.485	7.92	7.92	2.80	2.77

Annex 2

Unit: μ---K		Discharge temp. sensor table					
-20	542.7	20	68.66	60	13.59	100	3.702
-19	511.9	21	65.62	61	13.11	101	3.595
-18	483	22	62.73	62	12.65	102	3.492
-17	455.9	23	59.98	63	12.21	103	3.392
-16	430.5	24	57.37	64	11.79	104	3.296
-15	406.7	25	54.89	65	11.38	105	3.203
-14	384.3	26	52.53	66	10.99	106	3.113
-13	363.3	27	50.28	67	10.61	107	3.025
-12	343.6	28	48.14	68	10.25	108	2.941
-11	325.1	29	46.11	69	9.902	109	2.86
-10	307.7	30	44.17	70	9.569	110	2.781
-9	291.3	31	42.33	71	9.248	111	2.704
-8	275.9	32	40.57	72	8.94	112	2.63
-7	261.4	33	38.89	73	8.643	113	2.559
-6	247.8	34	37.3	74	8.358	114	2.489
-5	234.9	35	35.78	75	8.084	115	2.422
-4	222.8	36	34.32	76	7.82	116	2.357
-3	211.4	37	32.94	77	7.566	117	2.294
-2	200.7	38	31.62	78	7.321	118	2.233
-1	190.5	39	30.36	79	7.086	119	2.174
0	180.9	40	29.15	80	6.859	120	2.117
1	171.9	41	28	81	6.641	121	2.061
2	163.3	42	26.9	82	6.43	122	2.007
3	155.2	43	25.86	83	6.228	123	1.955
4	147.6	44	24.85	84	6.033	124	1.905
5	140.4	45	23.89	85	5.844	125	1.856
6	133.5	46	22.89	86	5.663	126	1.808
7	127.1	47	22.1	87	5.488	127	1.762
8	121	48	21.26	88	5.32	128	1.717
9	115.2	49	20.46	89	5.157	129	1.674
10	109.8	50	19.69	90	5	130	1.632
11	104.6	51	18.96	91	4.849		
12	99.69	52	18.26	92	4.703		
13	95.05	53	17.58	93	4.562		
14	90.66	54	16.94	94	4.426		
15	86.49	55	16.32	95	4.294	B(25/50)=3950K	
16	82.54	56	15.73	96	4.167		
17	78.79	57	15.16	97	4.045	R(90℃)=5KΩ±3%	
18	75.24	58	14.62	98	3.927		
19	71.86	59	14.09	99	3.812		

Part 5

Control

1. Standard Controller…….……

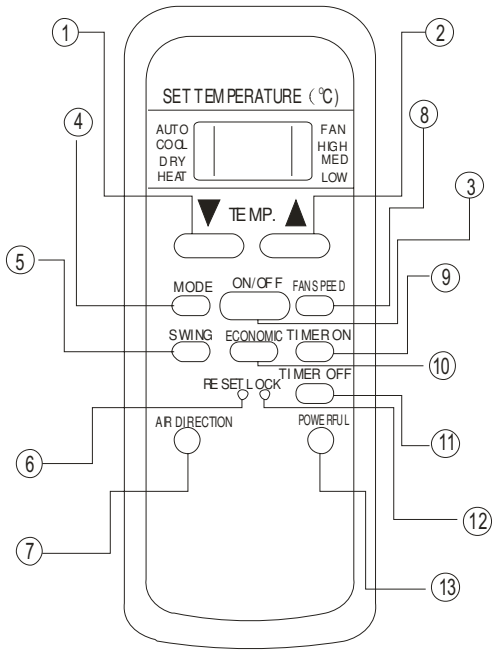
2. Optional Controller……...……..

1. Wireless remote controller R51D/E

1.1Remote Controller Specifications

Model	R51D/E，R51D/CE
Rated Voltage	3.0V(Alkaline dry batteries LR03×2)
Lowest Voltage of CPU Emitting Signal	2.0V
Reaching Distance Signal Range	8m (when using 3.0 voltage, it Gets 11m)
Environment	-5℃~60℃

1.2 Introduction of Function Buttons on the Remote Controller



1. **TEMP Button▼:** Press the button to decrease the indoor temperature setting.
2. **TEMP Button▲:** Press the button to increase the indoor temperature setting.
3. **ON/OFF Button:** Push this button to start the unit operation. Push the button again to stop the unit operation.
4. **MODE Select Button:** Each time you push the button, a mode is selected in a sequence that goes from AUTO、COOL、DRY、HEAT and FAN, as the following figure indicates:

⚠**NOTE:** *HEAT only for Heat Pump*

5. **SWING Button:** Push this button, the louver would swing up and down automatically. Push again to stop it.
6. **RESET Button:** When the RESET button is pushed, all of the current settings are cancelled and the control will return to the initial settings.(Use a φ1mm little round stick to push the button)
7. **AIR DIRECTION Button:** Push this button, the louver can be fixed at a desired angle. The louver swing (upward or downward) to a certain angle for each press. When the louvers swing at an angle which would affect the cooling and heating efficiency of the air conditioner, it would automatically change the swing direction (upward or downward).
8. **FAN SPEED Button:** This button is used for setting Fan Speed in the sequence that goes from AUTO、

LOW 、MED to HIGH, then back to Auto.

9. TIMER ON Button: Press this button to preset the time ON(start to operate). Each press will increase the time ON setting in 30minutes increments. When the setting time displays 10:00, each
press will increase the time ON setting in 60 minutes increments. To cancel the time ON program, simply adjust the time ON to 0:00.

10. ECONOMIC RUNNING Button: Press this button to go into the energy-Saving operation mode. Press the button again to cancel.

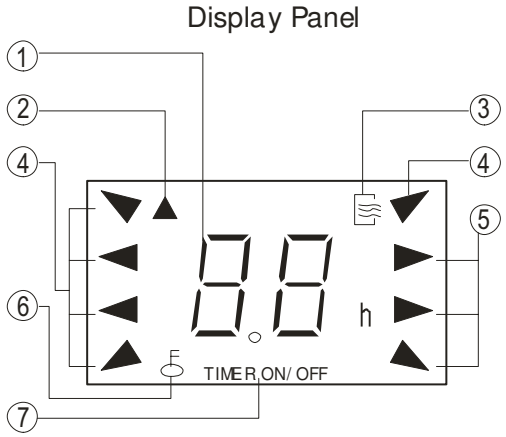
11. TIMER OFF Button: Press this button to preset the time OFF (turn off the operation). Each press will increase the time OFF setting in 30 minutes increments. When the setting time displays 10:00, each press will increase the time OFF setting in 60 minutes increments. To cancel the time OFF program, simply adjust the time OFF to 0:00

12. LOCK Button: Push this button to lock in all the current settings. To release settings, push again. (Use a φ1mm little round stick to push this button)

13. POWERFUL Button: Press this button on cooling/heating mode to go into powerful cooling (heating operation. Press again to cancel it.

Note: The unit will automatically revert back to the previous operational mode after continuously operating under the powerful cooling mode.

1.3 Names and Functions of indicators on Remote Controller



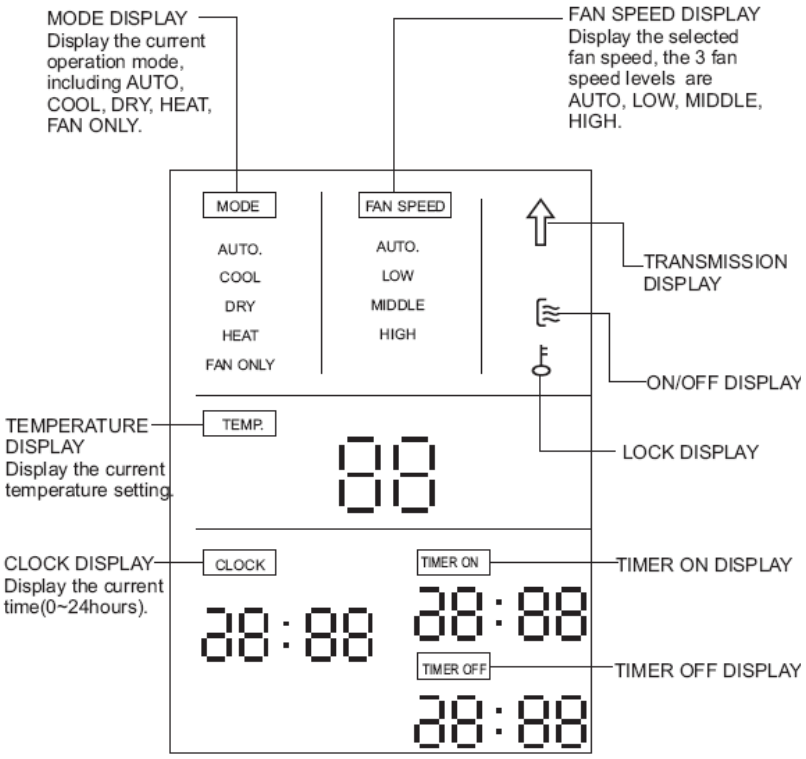
1. **DIGITAL DISPLAY area:** This area will show the temperature and, if in the TIMER mode, will show the ON and OFF settings of the TIMER. It will automatically revert back to show the temperature after 5 seconds. Under "FAN" operation mode, nothing is shown in this area.
2. **TRANSMISSION Indicator:** This indicator flashes once when remote controller transmits signals to the indoor unit.
3. **ON/OFF Indicator:** This symbol appears when the unit is turned on by the remote controller, and disappears when the unit is turned off.
4. **OPERATION MODE Indicator:** Shows the current operation modes--"AUTO", "COOL", "DRY", "HEAT" and "FAN".HEAT only available for heat pump model.
5. **FAN SPEED Indicator:** Press the FAN SPEED button to select the desired fan speed setting (Auto-Low-Med-High). You selection will be displayed in the LCD window except the Auto fan speed.
6. **LOCK Indicator:** This symbol appears when press the LOCK button, and disappears when presses it again.
7. **TIMER ON/OFF Display:** This display area shows the settings of TIMER. That is, if only the starting time of operation is set, it will display the TIMER ON. If only the turning off time of operation is set, it will display the TIMER OFF. If both operations are set, it will show TIMER ON/ OFF which indicates you have chosen to set both the starting time and off time.

2. Optional Controller

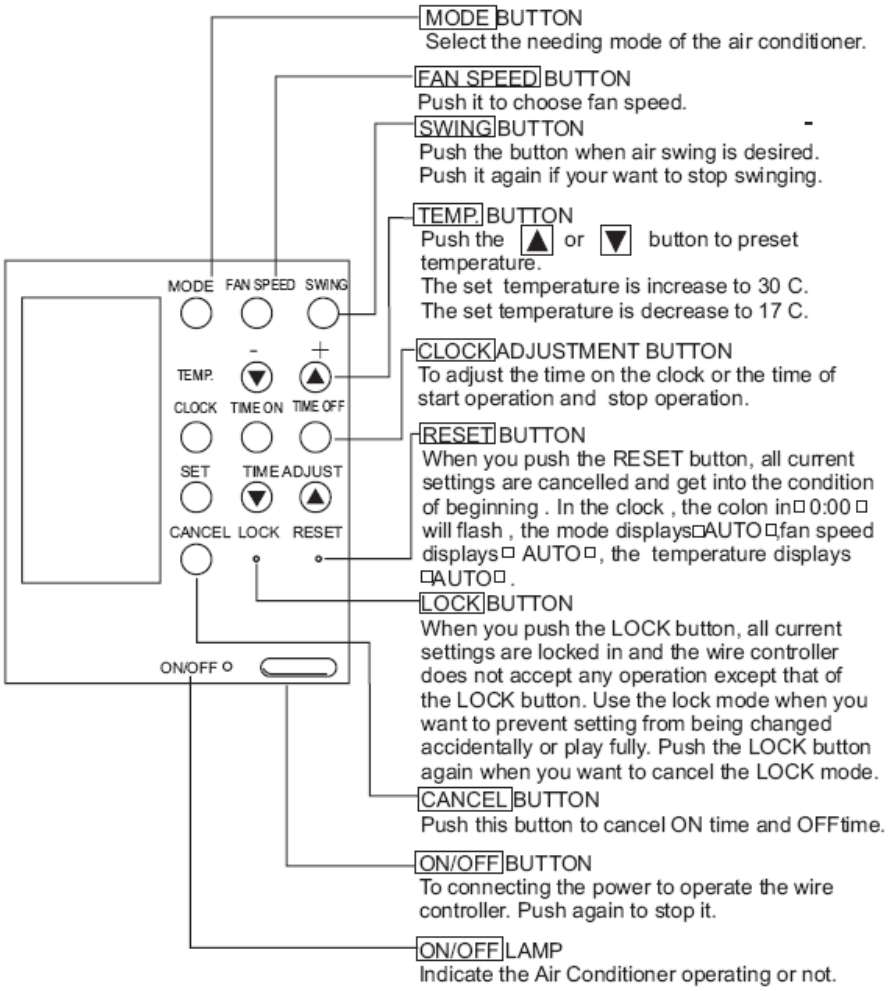
2.1The below is KJR-01B wired remote controller

QUERY
SET
MODE
TIMER
FAN SPEED
SWING
PREVIOUS
NEXT
TEMP.
TIMER
PAGE
+
−
OK
LOCK
RESET
ON / OFF
MEANING OF BUTTONS
1.QUERY: It is selected to enter into the QUERY Page to check the running status of every A/C.
2.SET: In case of non-Setting Page, it is selected to enter into Setting Page to change the running status of A/C. In case of Setting Page, it is selected to transfer between single and all setting methods.
3.MODE: In case of non-Setting Page, it is selected to enter into Setting Page. In case of Setting Page, it is to select the running mode or select off.
4.FAN SPEED: Select the fan speed of indoor units in case of Setting Page.
5.TIMER: In case of Setting Page, it is to adjust Timer On, Timer Off or Set Temp.(When exiting TIMER adjustment).
6.SWING: Select the Swing function to be ON or OFF.(Setting Page only)
7.PREVIOUS/NEXT: In Query Page or Setting Page, to select the previous or next A/C.
8.+/−: In case of Setting Page, to adjust the Set Temp., Timer On or Timer Off. In case of Query Page or Main Page, to query other information by PgUp/PgDn.
9.OK: To send the setting parameters of Mode, Temp., Fan Speed, Timer, Swing and so on to the responding A/C. (Setting Page only)
10.LOCK: Remote control lock/unlock the selected A/C(Setting Page only). At any time, press down QUERY button and then press down LOCK button at the same time, the CCM button will be locked/unlocked.
11.ON/OFF: At any time, all A/C can be central ON/OFF by pressing ON/OFF button.If one or more A/C are ON at present, then central OFF operation will be carried out. Otherwise, central ON operation will be carried out according to current selected setting parameters (in Setting Page) or default parameters.

NAME AND FUNCTION OF INDICATORS ON THE WIRE CONTROLLER



WIRE CONTROLLER AND THEIR FUNCTIONS


MODE BUTTON
Select the needing mode of the air conditioner.
FAN SPEED BUTTON
Push it to choose fan speed.
SWING BUTTON
Push the button when air swing is desired.
Push it again if your want to stop swinging.
TEMP. BUTTON
Push the ▲ or ▼ button to preset temperature.
The set temperature is increase to 30 C.
The set temperature is decrease to 17 C.
CLOCK ADJUSTMENT BUTTON
To adjust the time on the clock or the time of start operation and stop operation.
RESET BUTTON
When you push the RESET button, all current settings are cancelled and get into the condition of beginning . In the clock , the colon in□ 0:00 □ will flash , the mode displays□AUTO□,fan speed displays□ AUTO□, the temperature displays □AUTO□.
LOCK BUTTON
When you push the LOCK button, all current settings are locked in and the wire controller does not accept any operation except that of the LOCK button. Use the lock mode when you want to prevent setting from being changed accidentally or play fully. Push the LOCK button again when you want to cancel the LOCK mode.
CANCEL BUTTON
Push this button to cancel ON time and OFFtime.
ON/OFF BUTTON
To connecting the power to operate the wire controller. Push again to stop it.
ON/OFF LAMP
Indicate the Air Conditioner operating or not.
MODE
FAN SPEED
SWING
TEMP.
CLOCK
TIME ON
TIME OFF
SET
TIME ADJUST
CANCEL
LOCK
RESET
ON/OFF

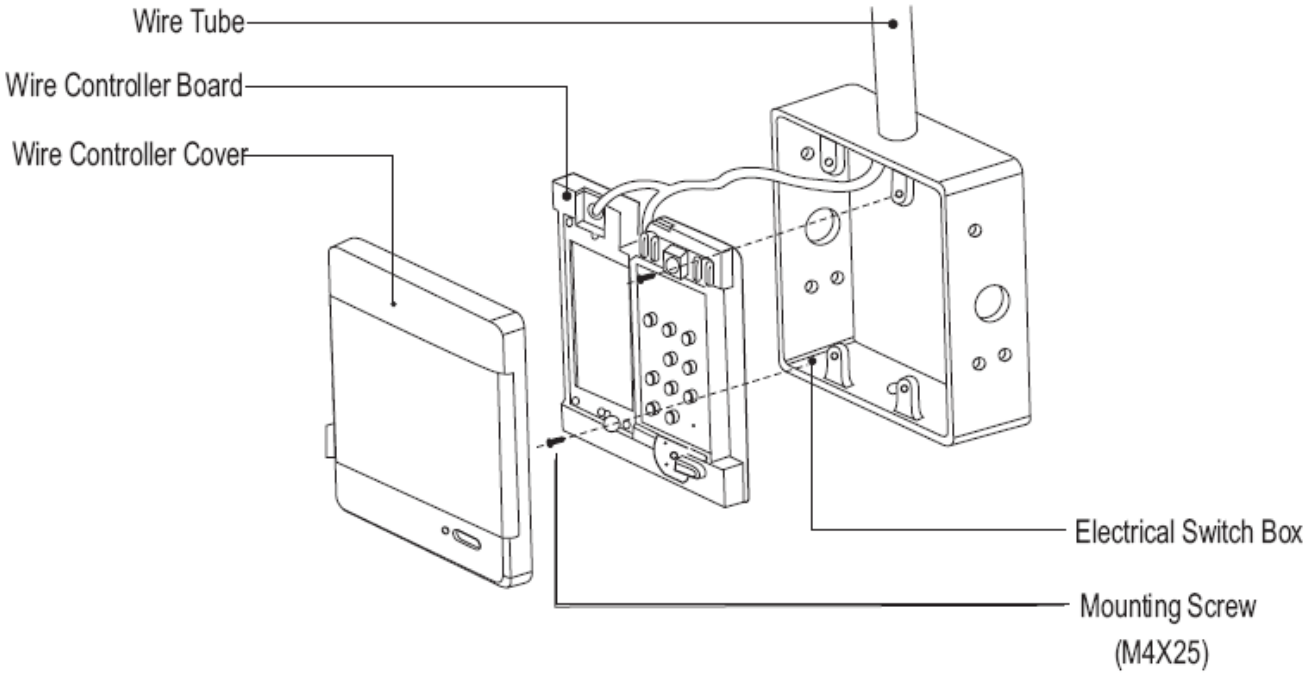
Installation

Installation into the wall

The diameter of Wire Controller wire must be suitable for its length.

Wiring Tube must be suitable for the wires.

Turn a screwdriver at the concave on bottom panel of the Wire Controller to remove the Cover.

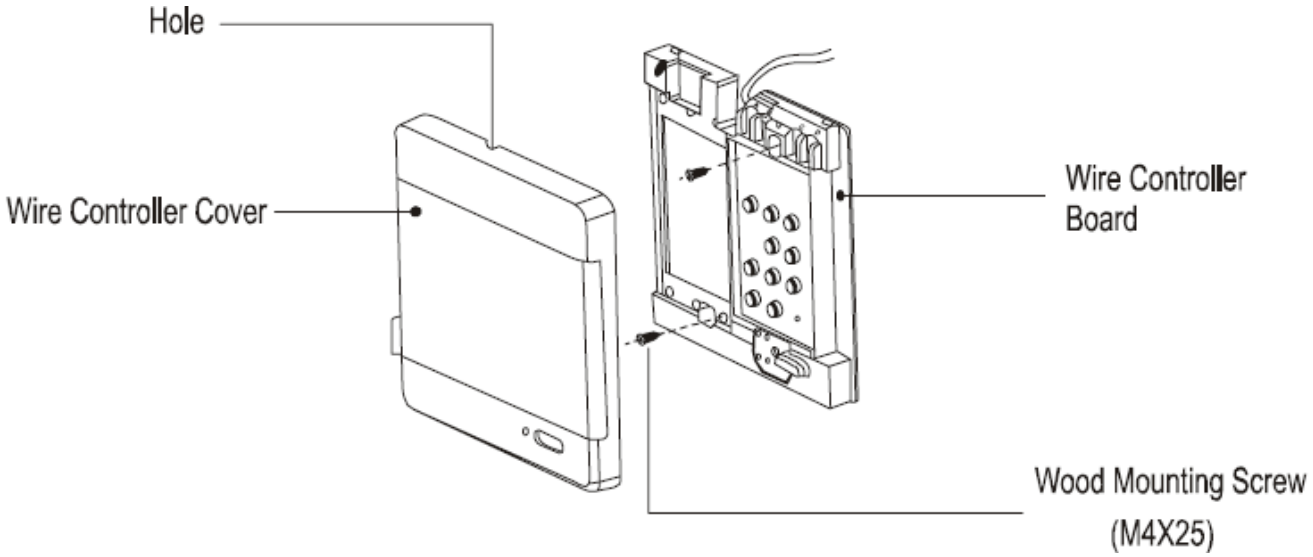


NOTE

- Never turn screws too tightly, or else the cover would be dented, or the Liquid Crystal breaks.
- Do not cut wires when installing Wire Controller cover.

Installation on the wall

Cut a hole that can let a Three-core Rubber Insulating Screen Cable pass by from the middle of Wire Controller Top Cover before installation.



Refer to Electrical Switch Box Installation above for other installation information you need.

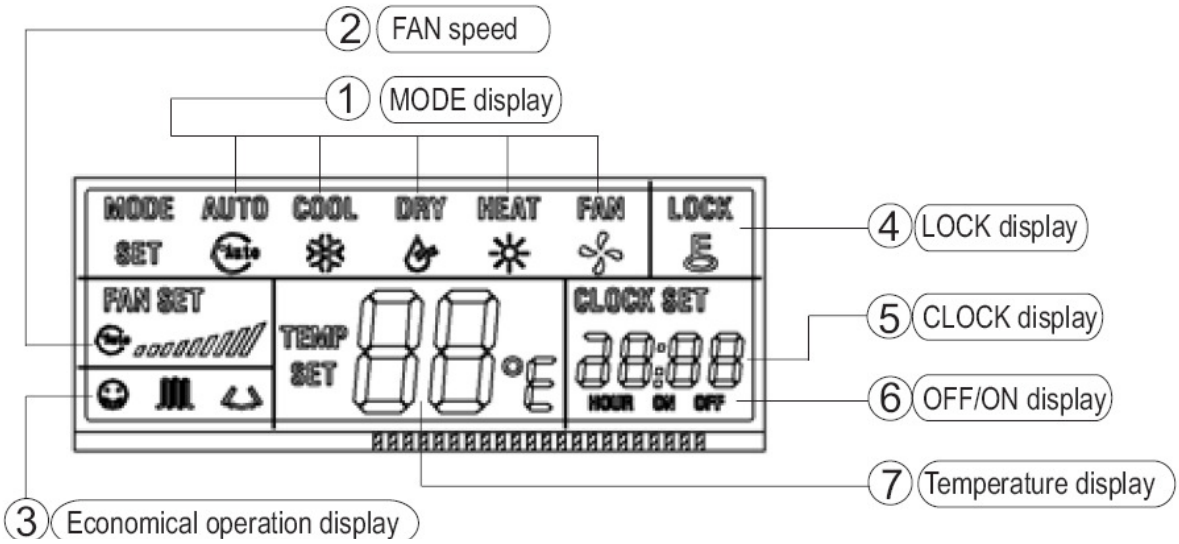
Use Clue around the Screen Cables and the Hole for sealing after installation completed.

NOTE

- Never turn screws too tightly, or else the cover would be dented or the Liquid Crystal breaks.
- Do not cut wires when installing Wire Controller Cover.
- Please leave enough long cable for maintenance of the Wire Controller Board.

2.2The below is KJR-10B wired remote controller

NAME AND FUNCTION OF LCD ON THE WIRE CONTROLLER



1 Mode select button (MODE):

Press MODE button to select “COOL”, “DRY” , "HEAT", or "FAN ONLY" mode.(HEAT is invalid for COOL ONLY wire controller.)

AUTO→ COOLING →DEHUMIDIFY →HEATING→ FAN

2 Fan speed button (FAN SPEED)

Press FAN SPEED to select fan speed from "AUTO", "LOW"," MED" , and "HIGH”. NOTE: some air conditioners have no MED fan speed, and then the MED is regarded as HIGH.

3 Economical operation displays:

Press ECONOMICAL to display economical operation, if press ECONOMICAL again then the display

disappears

4 Lock display

Press LOCK to display the icon of LOCK. Press the button again then the icon of LOCK disappears. In the mode of LOCK, all the buttons are invalid except for LOCK button.

5. CLOCK display

Usually display the clock set currently. Press the button CLOCK for 4 seconds, the HOUR part will flash, press button ▲ and ▼ to adjust HOUR. Press the button CLOCK again, the minute part flash, press button▲ or▼ to adjust MINUTE. After clock set or clock operation, it must press CONFIRM to complete the set.

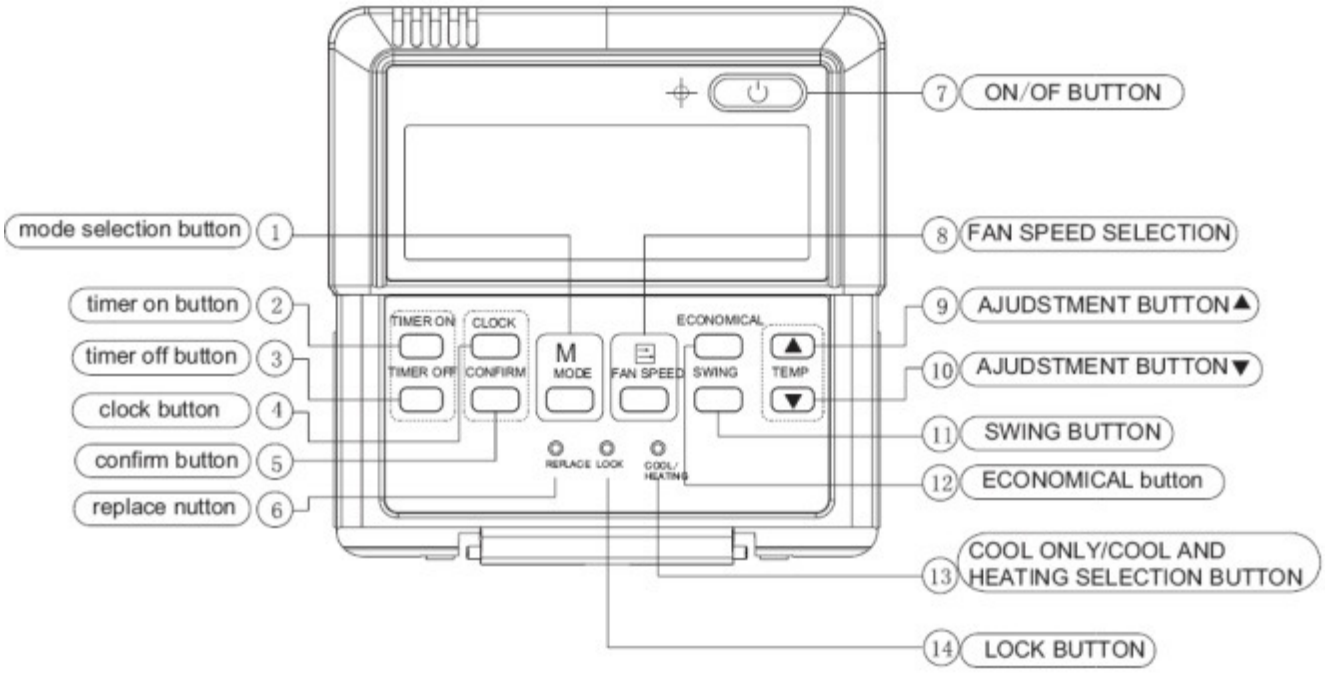
6. TIMER ON/OFF display:

Display ON at the state of TIMER ON adjustment or after only set the TIMER ON; Display OFF at the state of TIMER OFF adjustment or after only set the TIMER OFF; Display ON/OFF if simultaneously set the mode of TIMER ON and TIMER OFF.

7. Temperature display area:

Usually display the set temperature. Press the buttons of and to set temperature, at the mode of FAN, there is no figure display in the area.

NAME AND FUNCTIONS OF BUTTONS ON WIRE CONTROLLER



1 mode selection button:

It is used to select mode, push the button one time, then the operation modes will change in turn as follows:

AUTO→ COOLING →DEHUMIDIFY →HEATING→ FAN

Remark: no heating mode if wire controller is set as the cool only.

2 timer on button:

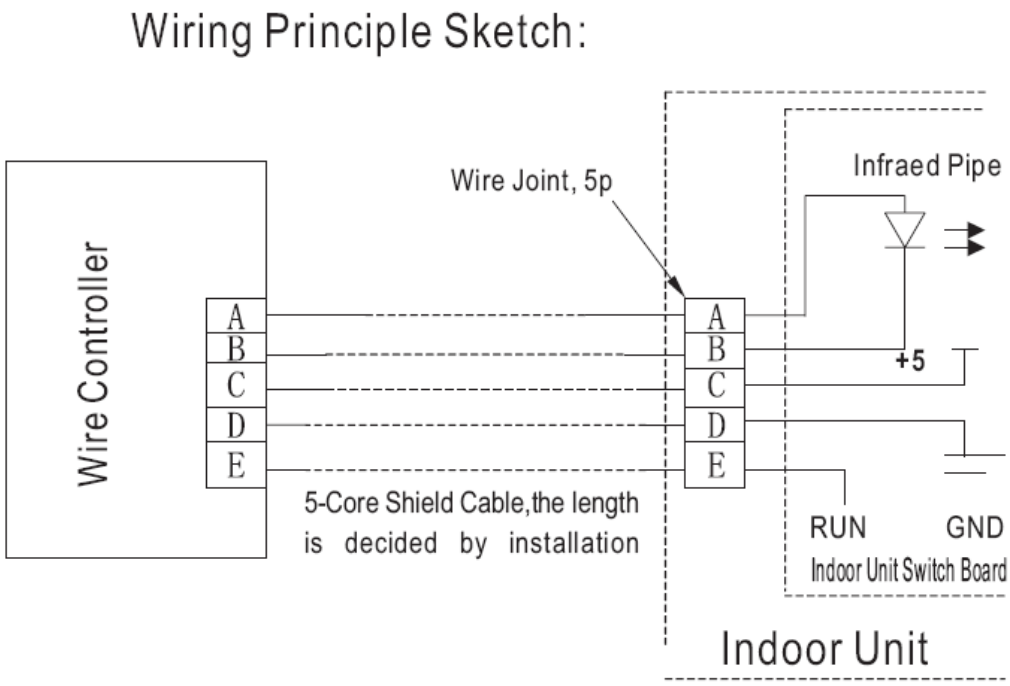
Push the button to set TIMER ON, each time you push the button the time moves forward by o.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want to cancel the TIMER ON, then adjust the time of TIMER ON as 0.0

3 timer off button:

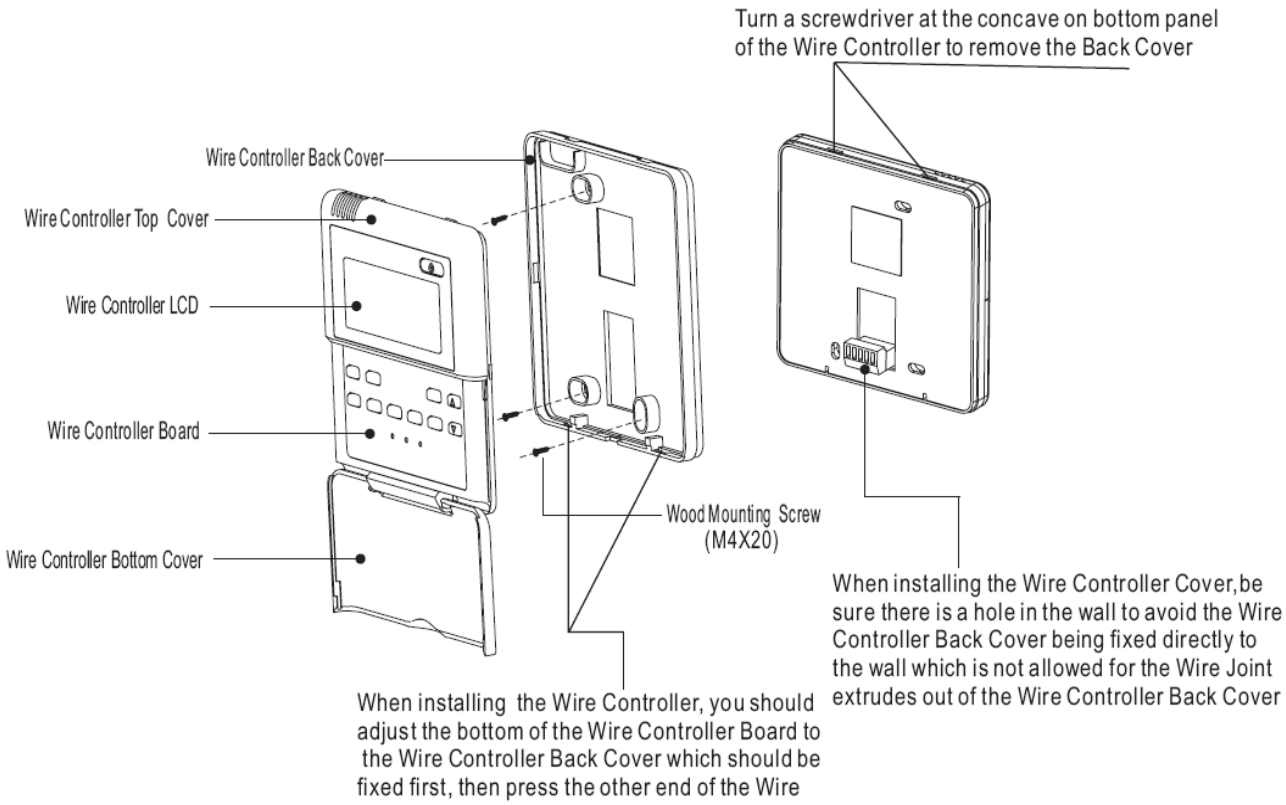
Push the button to set TIMER OFF, each time you push the button the time moves forward by o.5 hours. When the set time is over 10 hours, each time you push the button the time moves forward by 1 hour. If want

to cancel the TIMER OFF, then adjust the time of TIMER OFF as 0.0
4 CLOCK button:
Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When push the button for 4 seconds, the hour part on the clock display flashes every 0.5 seconds, then push button and to adjust hour; push the button CLOCK again, the minute part flashes every 0.5 seconds, then push and button to adjust minute. When set clock or alter
clock setting, must push the confirm button to complete the setting

Installation



Installation Notice:
When the air conditioner needs the constant frequency wire Controller, be sure adding a Wire Joint with 5 terminal named
A, B, C, D, E in indoor unit, and fixing a infrared emitter whose anode and cathode connecting with A and B near the receiver
in the Indoor Unit Switch Board, then connecting the terminal +5v, GND, Run in the Switch Board to C,D,E respectively.


Turn a screwdriver at the concave on bottom panel of the Wire Controller to remove the Back Cover
Wire Controller Back Cover
Wire Controller Top Cover
Wire Controller LCD
Wire Controller Board
Wire Controller Bottom Cover
Wood Mounting Screw (M4X20)
When installing the Wire Controller Cover,be sure there is a hole in the wall to avoid the Wire Controller Back Cover being fixed directly to the wall which is not allowed for the Wire Joint extrudes out of the Wire Controller Back Cover
When installing the Wire Controller, you should adjust the bottom of the Wire Controller Board to the Wire Controller Back Cover which should be fixed first, then press the other end of the Wire

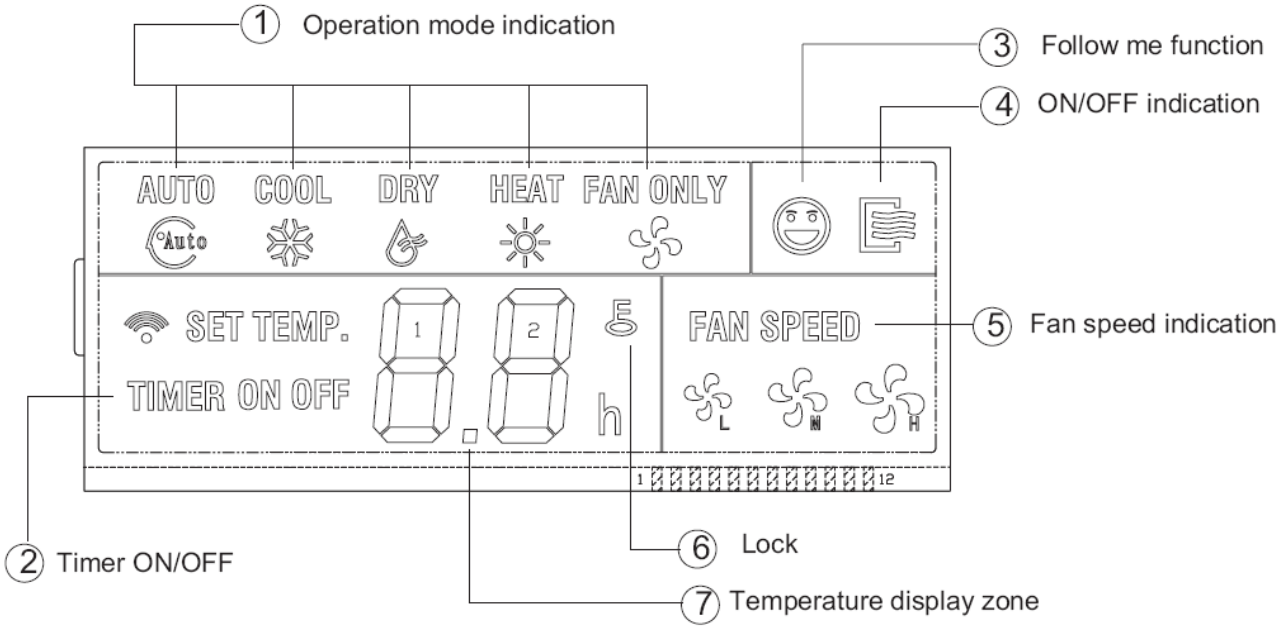
NOTE

Never turn screws too tightly, or else the cover would be dented or the Liquid Crystal breaks.

Please leave enough long cable for maintenance of the Wire Controller Board.

2.3The below is KJR-12B wired remote controller

NAME AND FUCTION OF INDICATORS ON THE CONTROLLER



1. Operation mode indication: When press" MODE" button, the following mode can be selected in circle. Auto Cool Dry Heat Fan only Auto.

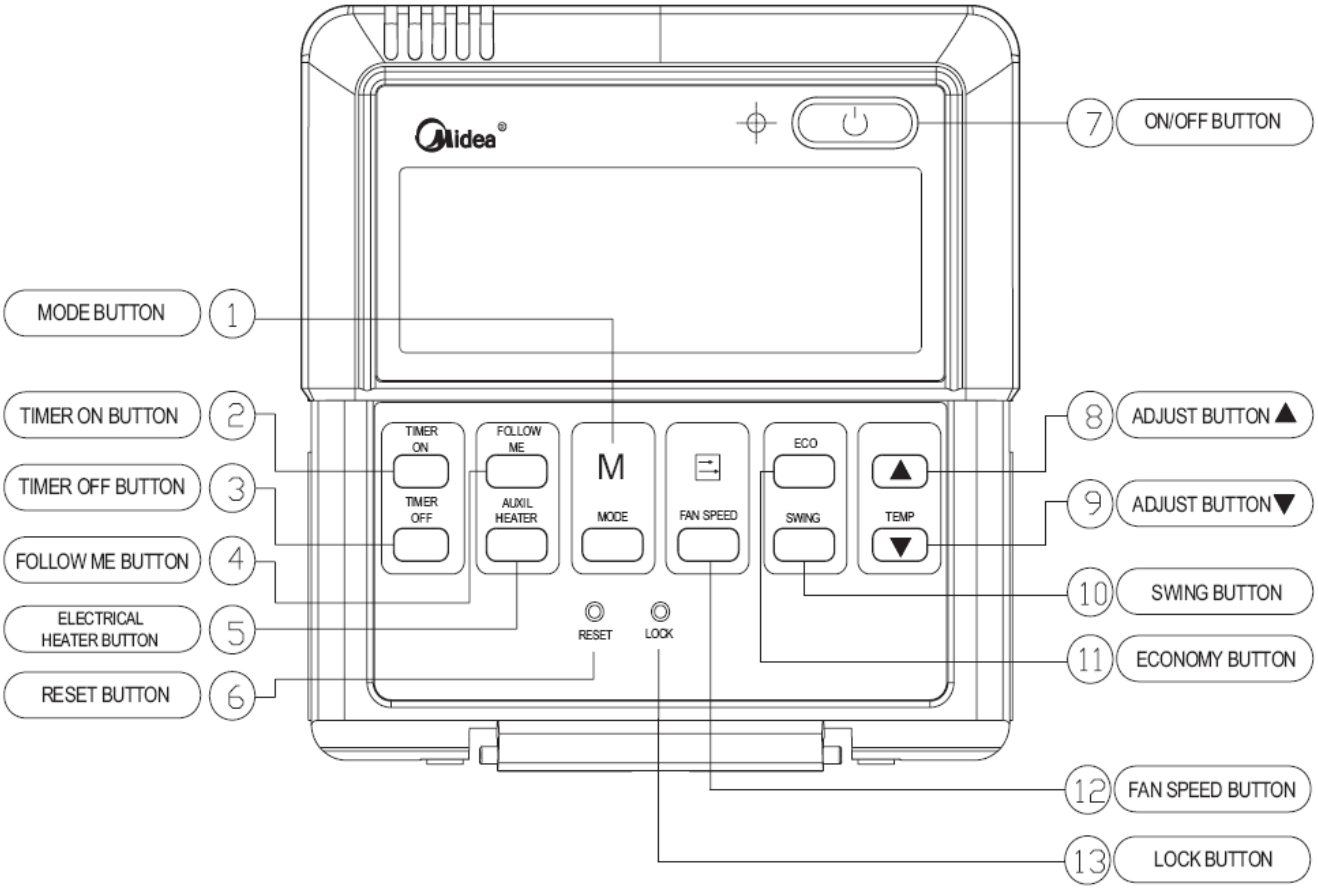
Auto→ Cool→ Dry →Heat→ Fan only →Auto

For cooling only model, heat mode is skipped.

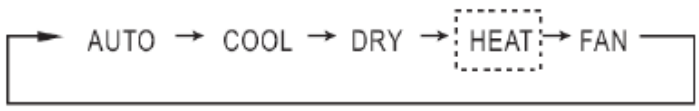
2. Timer: When adjust setting on time or only on time is set, the "ON" is lighted. When adjust setting off time or only off time is set, the" OFF" is lighted. If on and off timer are both set, the "ON" and "OFF" are both lighted.

3. Follow me function: There is a temperature sensor inside the wire controller, after setting temperature, it will compare the two temperatures, and the space of wire controller will be the same as setting temperature. It is available under cooling, heating, auto mode.
4. ON/OFF indication: When it is on, the icon display, otherwise it is extinguished.
5. Fan speed indication: There are four fan modes: low, middle, high, auto. For some models, no middle fan then the middle fan is seen as high speed.
6. Lock: When the"LOCK"button is pressed, the icon appears and other buttons is unable, press again, the icon disappears.
7. Temperature display zone: Generally it displays setting temperature; it can be adjusted by press temperature button▲and▼ .But in fan mode, no display here.

NAME AND OPERATION OF THE BUTTON ON THE WIRE CONTROLLER

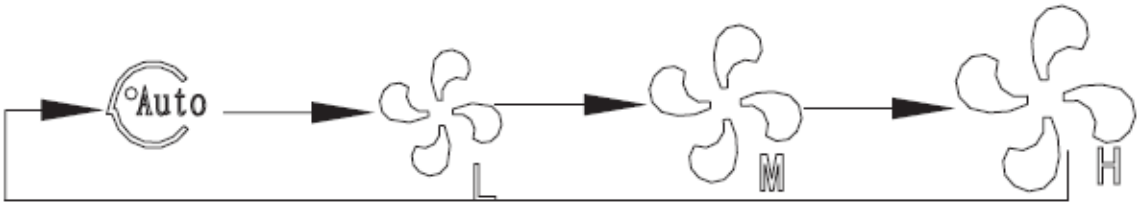


1. Mode botton:When press this button, the operation mode change as the following sequence:



Remark: For the cooling only model, the heating mode is skipped.
2. Timer on button: Press this button, timer on function is active. Then every press, the time increase 0.5h, after 10h, 1h incensement after each press. If cancel this Function, just set it to "0.0"
3. Timer off button: Press this button, timer off function is active. Then every press, the time increase 0.5h, after 10h, 1h increasement after each press. If cancel this function, just set it to "0.0" .
4. Follow me button: When under cool, heat and auto mode, press this button, follow me function is active. Press again, this function is ineffective.
5. Electrical heater button: If press this button in heat mode, electrical heater function become ineffective.
6. Reset button (hidden): Use a 1mm stick to press in the little hole , then the current setting is canceled . The wire controllers enter into original state.

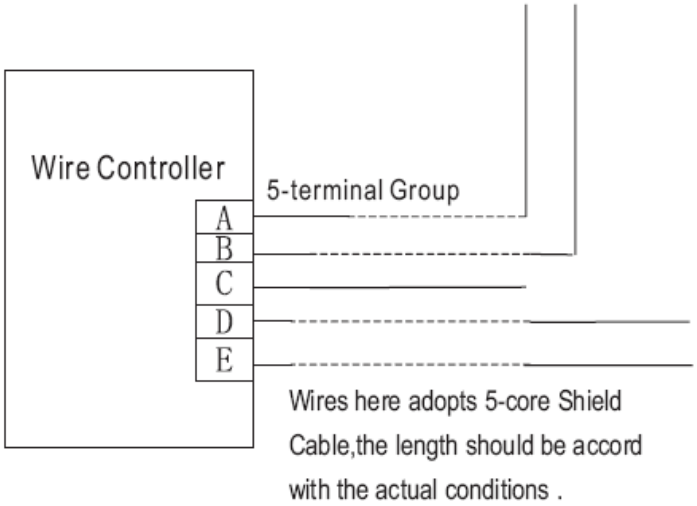
7.ON/OFF button: When in off state, press this button, the indicator is on, the wire controller enter into on state, and send setting information to in door Pcb . When in on state, press this button, the indicator is off, and send instruction. If timer on or timer off has been set, it cancel this setting then send instruction to stop the machine.
8. Adjust button: Set indoor temperature up. If press and hold on, it will increase at 1degree per 0.5 second.
9. Adjust button: Set indoor temperature down. if press and hold on, it will decrease at 1degree per 0.5 Second.
10. Swing button: First press, start swing function; second press, stop swing. (Match to some model with swing function).
11. Economy operation button: press this button, the indoor unit operates in economy mode, press again, exit this mode (it may be ineffective for some models)
12. Fan speed button: press this button consecutively; the fan speed will circle as follow:



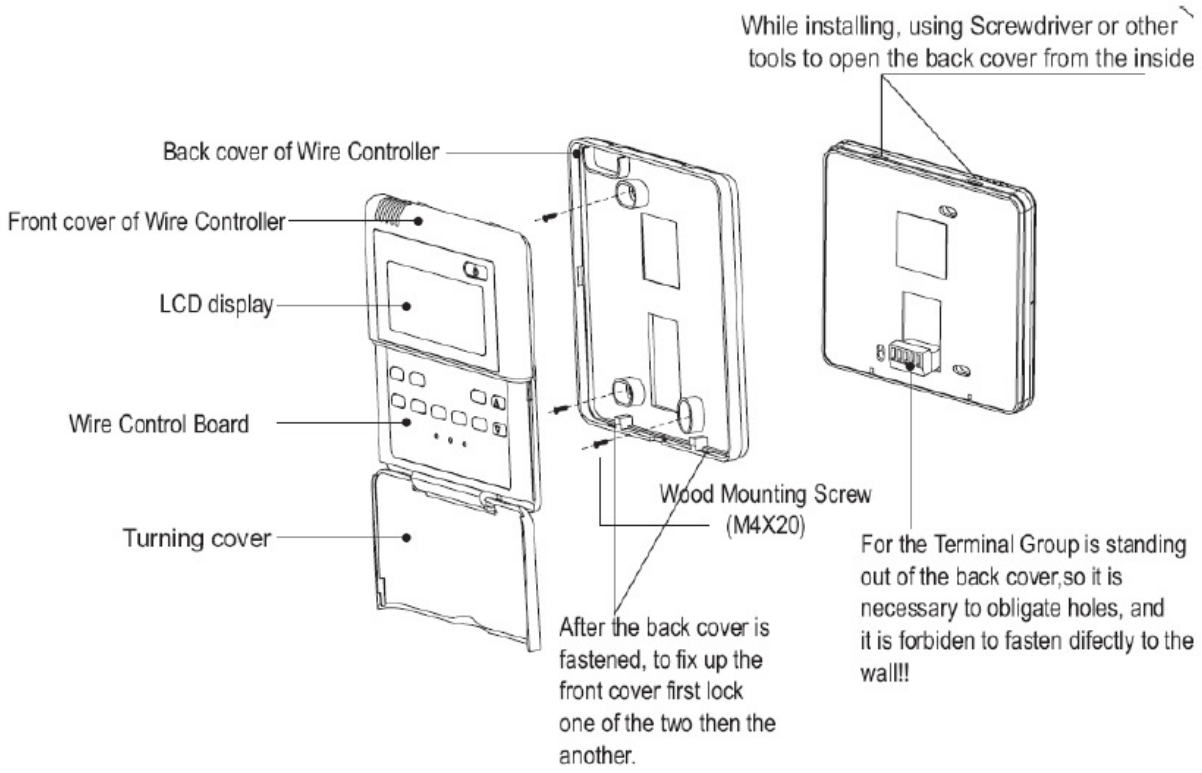
13. Lock button (hidden): When you push the LOCK button, all current settings are locked in and the wire controller does not accept any operation except that of the LOCK button. Use the lock mode when you want to prevent setting from being changed accidentally or play fully. Push the LOCK button again when you want to cancel the LOCK mode.

Installation

Wiring technique and principle：



Instruction for installing
When it is necessary to use this controller, it needs to add a small 5-terminal Group and fasten a infrared emitter near to the receiver in the switch board. Connecting the anode and cathode to A 、B of the Terminal Group, also connect
+5V 、GND、 RUN 、of the switch board separately to the C、 D、 E of the 5-terminal Group.


While installing, using Screwdriver or other tools to open the back cover from the inside
Back cover of Wire Controller
Front cover of Wire Controller
LCD display
Wire Control Board
Turning cover
Wood Mounting Screw (M4X20)
For the Terminal Group is standing out of the back cover,so it is necessary to obligate holes, and it is forbiden to fasten difectly to the wall!!
After the back cover is fastened, to fix up the front cover first lock one of the two then the another.

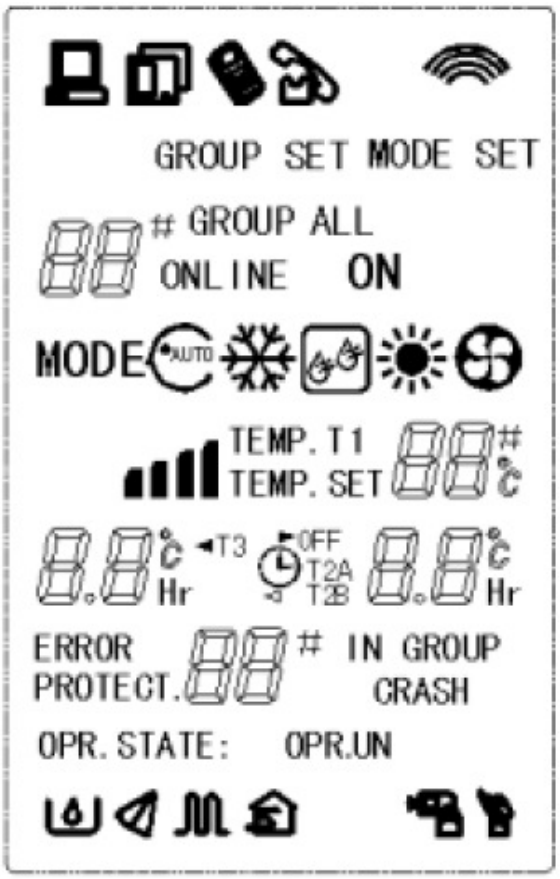
NOTE

- The connecting wire should be a little longer as to take away the switch board easily for maintenance.
- The connecting wire should be a little longer as to take away the controller easily for maintenance.
- If you want use KJR-12B wired controller, the indoor PCB need to customize.

2.4The below is MD-CCM01 indoor CCM

Note: The CONo 35INV can’t connect to central controller

Name and Function of Indicators on CCM LCD Screen



1) Common Display Data

Common display data will be indicated in all display pages.

a. Figure means CCM is in network control with PC or Gateway.

b. Figure means CCM is in communication connection with Function Module.

c. Figure means CCM is in communication connection with Message Remote Control Module.

d. Figure means CCM is in communication connection with Telephone Remote Control Module.

e. If CCM is in normal communication with NIM, then (Blank), ●, , will be displayed in dynamic circulation. Otherwise, no any display.

f. Lock Symbol means the CCM is in Lock state or the buttons are in Lock state. ON means the buttons are in Lock state or both CCM and Buttons are in Lock state, and 0.5 second flash means the CCM is in Lock state.

g. When setting page layout, if the selected air-conditioner is in Remote Controller Lock state (in case that several air-conditioners are in operation, if only one is in Remote Controller Lock state, then that means in Lock state.), symbol will display steadily. If in Mode Lock state, symbol will flash in 0.5Hz. If Remote Controller Lock state and

Mode Lock state exist at the same time, symbol will display steadily.

2) Display Data Treatment

Data Display area adopts 7-segment code, and there are 5 groups of 2-digital 7-segment display.

a. **TEMP.** Display

TEMP. Display is applicable to the following: Set Temp. Ts（17-30℃）, Indoor Return Air Temp. T1, Evaporator Pipe Temp. T2A, Evaporator Middle Pipe Temp. T2B, Condenser Pipe Temp. T3. And the allowable data display range is 0℃--99℃. If higher than 99℃, then display 99℃. If lower than 0℃, then display 0℃. What's more, the real display range also has relationship with the PCB temperature checking range. If no effective data, then display "-"and Unit symbol ℃ will be ON.

b. **CURRENT** Display

CURRENT display is applicable to Compressor Current. The allowable range is 0A-99A. If no effective data, then display "-"and Unit symbol mp **A** will be ON.

c. **TIMER** Display

TIMER is used to display the time of TIMER ON and TIMER OFF. The unit symbol Hr will be ON at the same time.

d. **ERROR** code display

ERROR is used to display malfunction warning data of the air-conditioner or the CCM.

The display range of ERROR code is E0-EF, where, E means ERROR, 0-F means ERROR code, or Network ERROR display 00-0F#. If no EEROR, then display "E-" and # will be ON.

e. **PROTECT.** Code display

PROTECT. Is used to display malfunction warning data of the air-conditioner or the CCM.

The display range of PROTECT. Code is P0-PF, where, P means PROTECT, 0-F means PROTECT. Code. If no PROTECT, then display "P-" and # will be ON.

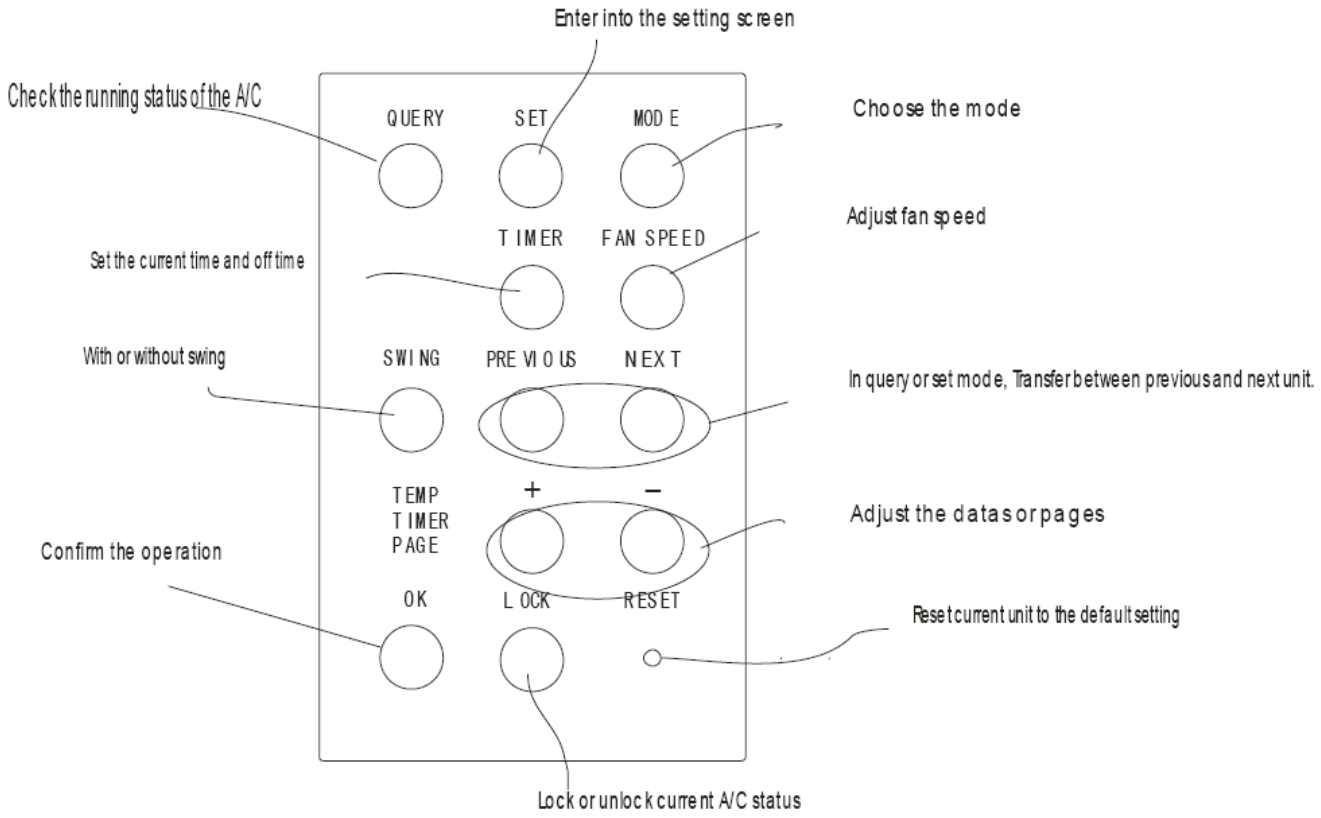
f. **ADDRESS** display

ADDRESS is used to display the ADDRESS code of the present selected air-conditioner.
The display range is 0-63, and at the same time # will be ON.
g. **Number** Display of Online air-conditioners and **ON/OFF** air-conditioners It is used to display the number of online air-conditioners in **LAN** and **ON/OFF** air-conditioners at present. The display range is 0-64.
h. **Auxiliary function** display

Means ECONOMIC RUNNING, means SWING, means Auxiliary Heater, means VENT.

i. **Mode Confliction** Display
Function Confliction display will flash at interval 1 second.
3) **Stand-by Page** Display
Stand-by page data consist of several pages and the page number is not fixed.
Stand-by page can display the total number of air-conditioners in network, under ON state and under OFF state. If one or more air-conditioners in network have malfunction, or the CCM checks other malfunctions, the Stand-by page will display the first ERROR Code from small to big according to the number. Other malfunctions can be queried by buttons "**+**" and "**-**". If no malfunction and one or more online air-conditioners in network are in ON state, the Stand-by page will display present main Running Mode, Set Temp. And Indoor Fan Speed. If no malfunction and all air-conditioners in network are in OFF state, ERROR Code nor Running mode will not be displayed.
4) **Query Page** Display
Query Page data consist of several pages and the page number is not fixed.
a. When first entering into Query Page Display, the address of the first online air-conditioner will be selected in default and the data of the first page will be displayed.
b. The data of other pages can be displayed in circulation by pressing buttons "+" or "-".
c. The running state data of different air-conditioners can be queried by pressing "Previous" or "Next" to select the address.
5) **Running Mode Setting Page** Display
Running Mode Setting Display only has one page. And display the selected mode, auxiliary function and the selected operation state.

Name and Function of Buttons on CCM



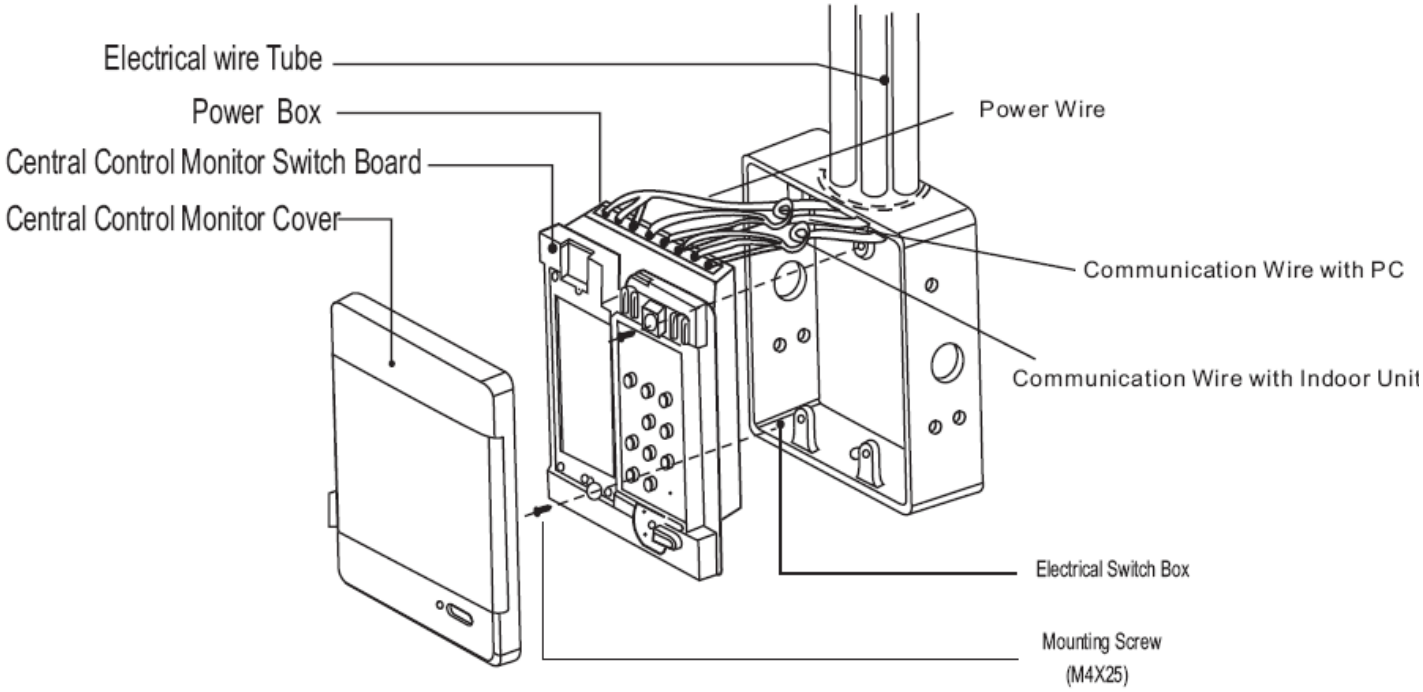
Installation

1. Adopt Electrical Switch Box

The diamete of Central Control Monitor wire must be suitable for its length.

Electrical wiring tube must be suitable for the wires.

Turn a screwdriver at the concave on bottom panel of the Central Control Monitor to remove the cover.



NOTE

●Never turn screws too tightly, otherwise the cover would be dented, or the Liquid Crystal would be broken.

●Do not cut wires when installing the cover of Central Control Monitor.

2. Installation of CCM and NIM

(1) Terminal P, Q, E at the back of CCM are connected to the terminal P, Q, E of PC.

The CCM power connects 220V~ 50Hz power directly to the terminal L, N, At the back of wire controller.

(2)The communication cable of CCM and power cable should not be placed in the same electrical wire tube and the two tubes should have 300-500mm distance.

(3) The length of CCM communication cable should not exceed 1200m.

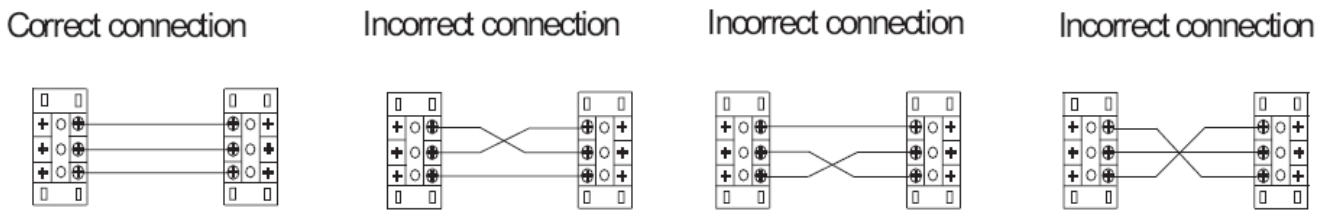
(4) The shield cable should try to avoid middle transfer connector. If have connectors, it had better to connect by terminal block.

(5) After finishing connection, do not use Megger to have the insulation check to the signal wire.

3. Wiring Method of CCM and NIM

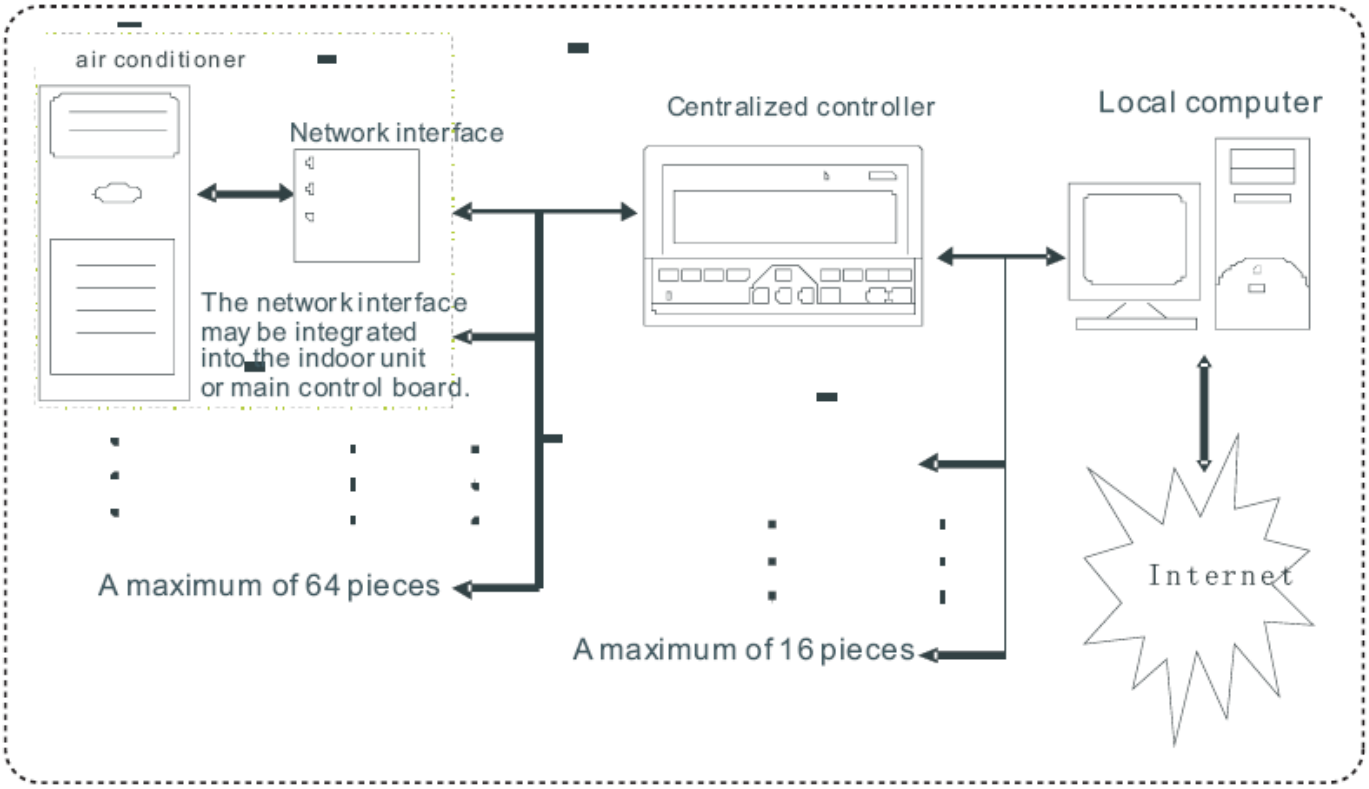
The communication port between CCM and NIM has polarity, and terminal X, Y, E must connect to the responding

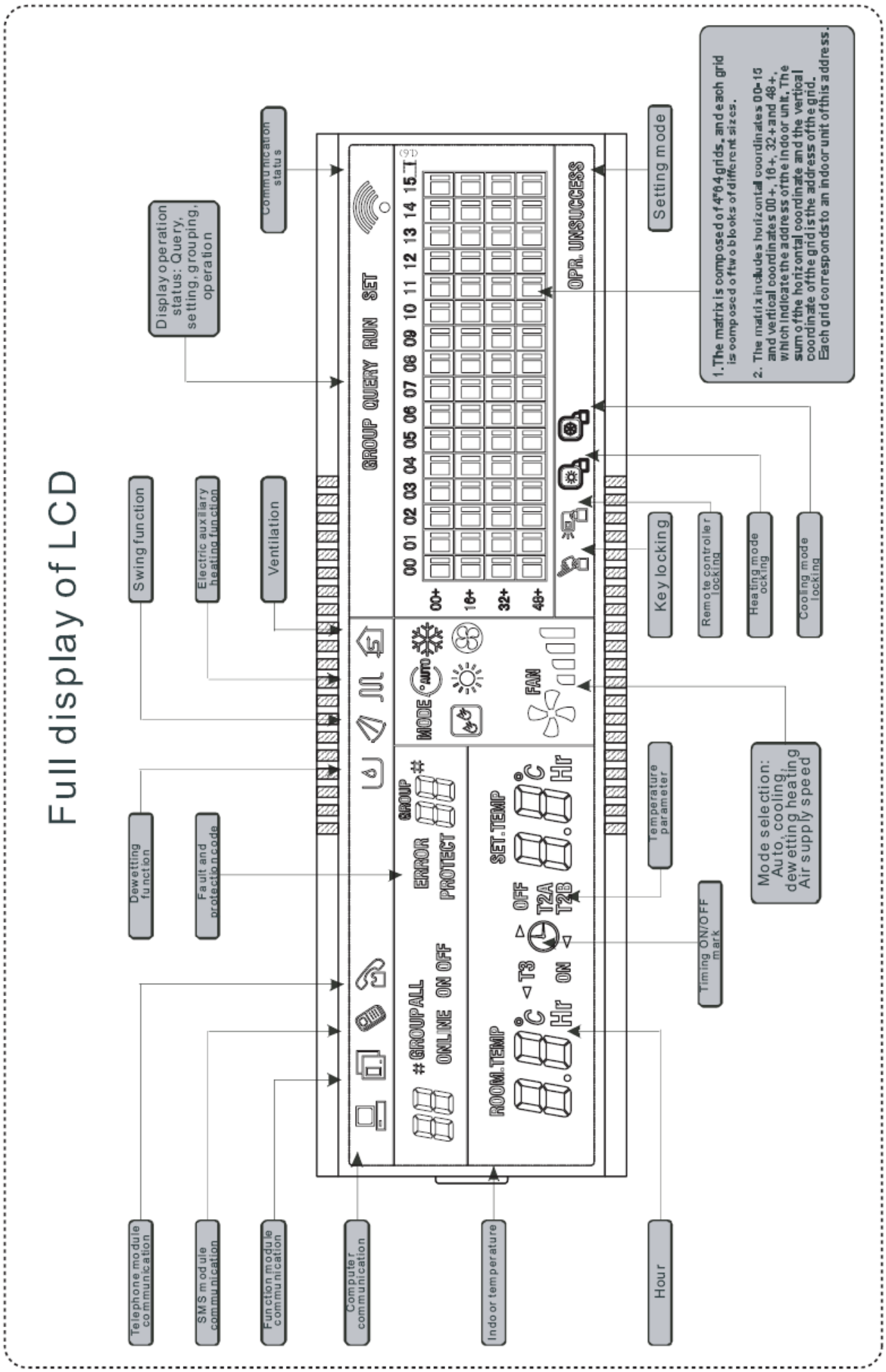
X, Y, E.It is the same for the port between CCM and module of Rs485 to Rs232.



2.5The below is MD-CCM03 indoor CCM

CENTRAL REMOTE CONTROLLER
MODE
FAN
LOCK
OK
SET
QUERY
RESET
ADD
MODE
FAN
TIME ON
REDUCE
SWING
TIME OFF
1."QUERY"key: It is used to enter the query page, examine the running status of each air-conditioner.
2."SET"key: It is used to choose to enter the set page when in non-set page, to change the air-conditioner running status. When in the set page, it is used in switching the setting mode between single unit and entity.
3."MODE"key: It is used to choose to enter the set page when in non-set page, to change the air-conditioner running status. When in set page, it is used to select the operation mode or cut-off.
4."FAN"key: When in set page, it is used to select the fan speed step.
5."TIME ON/OFF"key: When in set page, it is used to adjust timing to starting up , cut-off or exit the setting of timing to back to the temperature adjust.
6."SWING"key: In set page, it is used to turn on or turn off the "SWING" function.
7."UP,DOWN,LEFT,RIGHT"key: In query or set page, it is used to select the air-conditioner.
8."ADD, REDUCE"key: In set page, it is used to adjust the setting temperature or time to starting up or cut-off.
9."OK"key: In set page, it is used to send the parameters of set mode , set temperature, set fan speed, timing information, swing function etc. to the corresponding air-conditioner.
10."LOCK"key: In set page, it is used to lock the air-conditioner by remote controller, or cancel lock. Anytime click the "QUERY" key and the "LOCK" key at the same time, it will lock the keys of the centralized controller or cancel.
11."On/Off"key: Anytime may concentrate the on/off operation to all air-conditioners, currently an air-conditioner or more are on, do the centralized operation to close down, or starting-up according to the current parameters selected or default parameters (if in set page)


air conditioner
Network interface
Centralized controller
Local computer
The network interface may be integrated into the indoor unit or main control board.
A maximum of 64 pieces
A maximum of 16 pieces
Internet


Full display of LCD
Swing function
Electric auxiliary heating function
Ventilation
Communication status
Display operation status: Query, setting, grouping, operation
Setting mode
1. The matrix is composed of 4*64 grids, and each grid is composed of two blocks of different sizes.
2. The matrix includes horizontal coordinates 00-15 and vertical coordinates 00+, 16+, 32+ and 48+, which indicate the address of the indoor unit. The sum of the horizontal coordinate and the vertical coordinate of the grid is the address of the grid. Each grid corresponds to an indoor unit of this address.
GROUP QUERY RUN SET
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15
00+
16+
32+
48+
OPR. UNSUCCESS
Key locking
Remote controller locking
Heating mode locking
Cooling mode locking
Dewetting function
Fault and protection code
Temperature parameter
Timing ON/OFF mark
Mode selection: Auto, cooling, dewetting heating Air supply speed
GROUP
ERROR
PROTECT
MODE
FAN
SET.TEMP
ROOM.TEMP
GROUP ALL
ONLINE ON OFF
T3
T2A
T2B
OFF
ON
Telephone module communication
SMS module communication
Function module communication
Computer communication
Indoor temperature
Hour

Liquid crystal matrix display description:

1. The liquid crystal matrix is composed of 4*64 grids, and each grid is composed of two blocks of different sizes (as shown in the above figure).

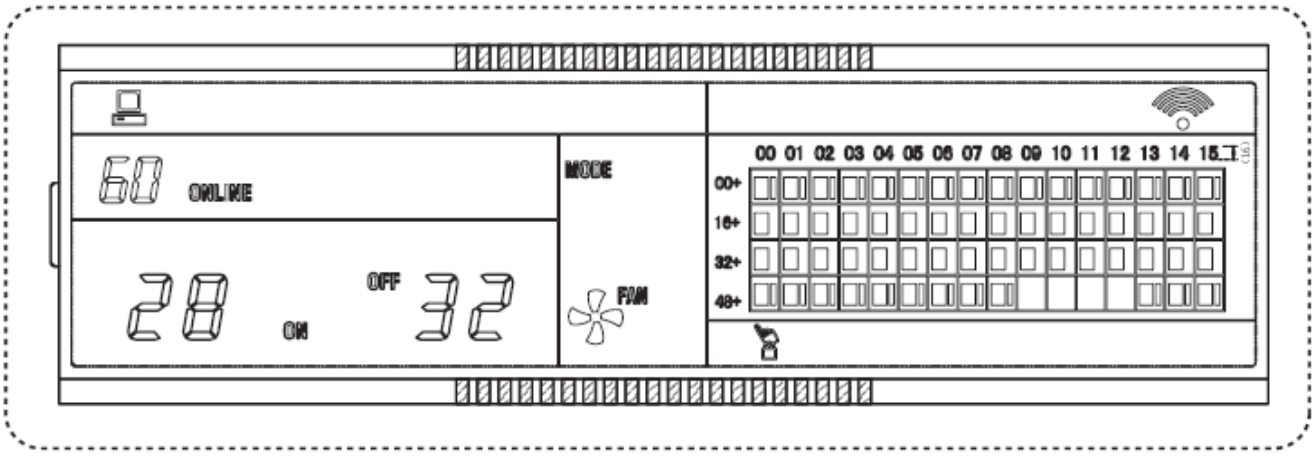
2. The matrix includes horizontal coordinates 00-15 on the upper side and vertical coordinates 00+, 16+, 32+ and 48+ on the left

Side, which indicate the address of the indoor unit. The sum of the horizontal coordinate and the vertical coordinate of the grid is the address of the grid. Each grid corresponds to an indoor unit of this address.

3. One grid is composed of two blocks of different sizes. The status

Indication table is as follows:

Status / Object	Constantly on	Slow blink		Fast blink
Big black block	In-service	Selected		Out of service
Small black block	Power on		Fault of indoor unit	Power off



LCD display description

1. Description of the standby page

1) The LCD displays the standby page, 60 air conditioners are in service, of which 28 are powered on and 32 off.

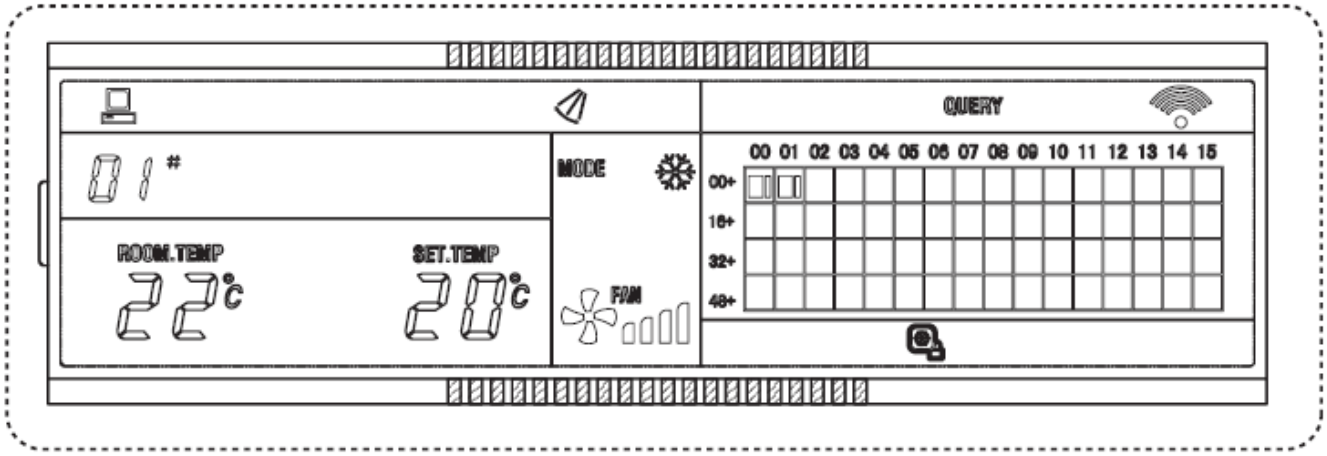
2) In the matrix, the big dots of (00, 16+) and (15,32+) are luminous, and the small dots are not luminous. It indicates

the 32 air conditioners with the addresses from 16 to 47 are powered off.

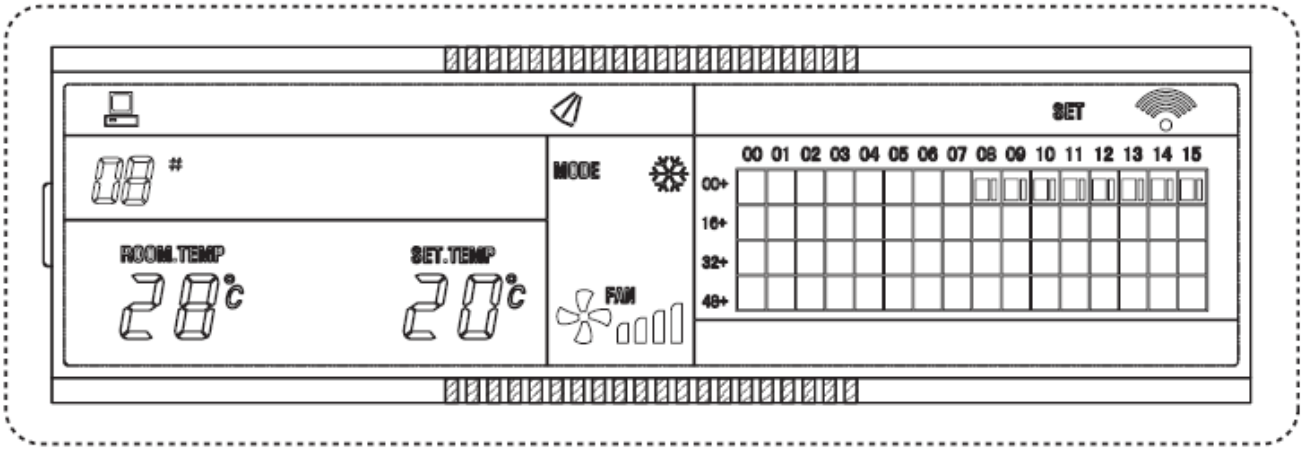
3) In the matrix, the big and small dots of (09, 48+) and (12, 48+) are not luminous. It indicates the four air conditioners

with the addresses from 57 to 60 are outside the network.

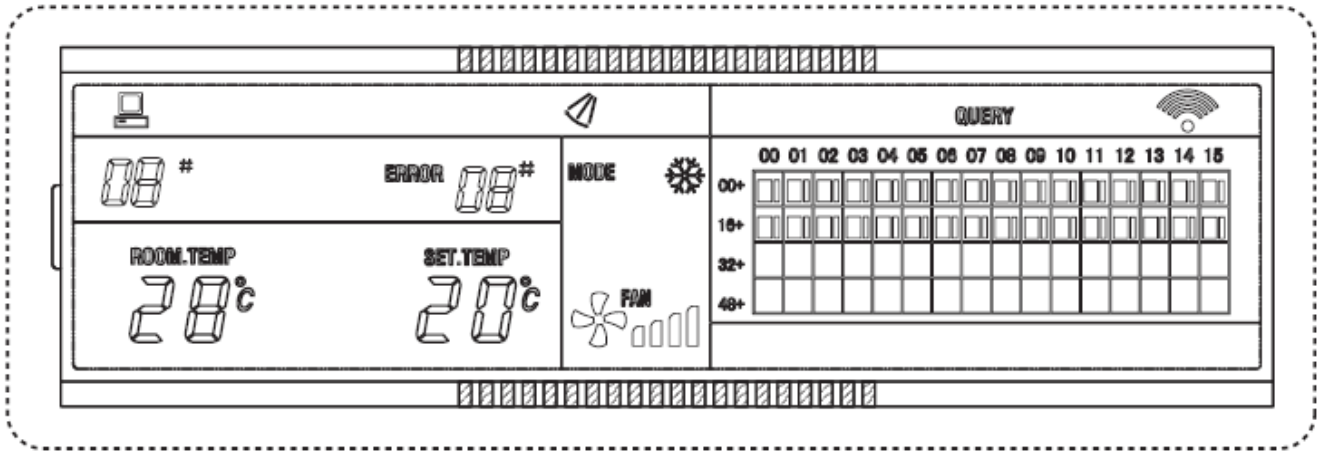
4) All other big and small dots in the matrix are luminous. It indicates all other air conditioners are in the network and
powered on.
5) The address of the air conditioner is sum of the coordinates. For example, the address of (09, 48+) is 09+48=57.
6) The centralized controller keypad is locked, and the centralized controller communicates with the computer normally.



2. Description of the query page
1) The LCD displays the query page, and the air conditioner with the address of 08 is being queried. Mode of the air conditioner with the address 01 is: Cooling, strong air, swing on, indoor temperature 22° C, set temperature 20° C, cooling mode “lock”.
2) In the matrix, only the big and small black dots at (00, 00+) and (01, 00+) are luminous. It indicates the in-service and power-on status of the air conditioners with the addresses of 00 and 01.
3) The centralized controller communicates with the computer normally.



Description of the setting page
1) The LCD displays the setting page, and queries the air conditioner with the address of 08. The mode of the air conditioner with the address 08 is: Cooling, strong air, swing on, indoor temperature 28° C, set temperature 22° C, cooling.
2) In the matrix, only the big black dots from (08, 00+) to (16, 00+) are luminous. It indicates the air conditioners with the addresses from 08 to 16 are in service.
3) The centralized controller communicates with the computer normally.



Fault page display description

1) Query the air conditioner with the address of 08 in the query page. The air conditioner with the address of 08 is faulty, and the fault code is 08. The big black dot below (08, 0+) blinks.

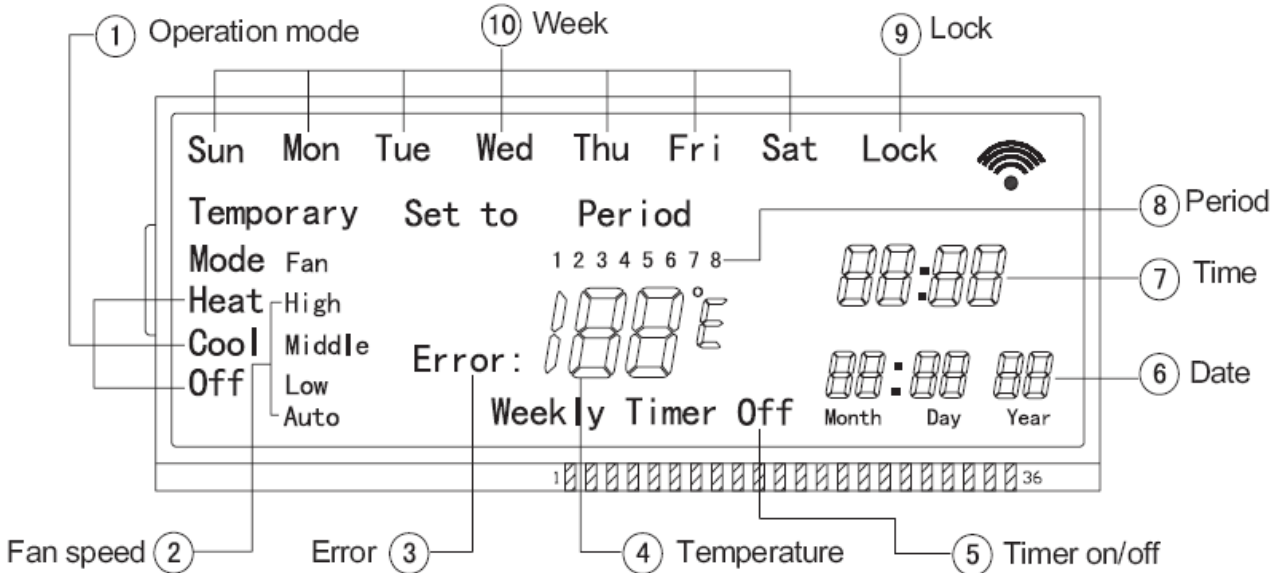
2) In the matrix, only the big and small black dots from (00, 00+) to (16, 15+) illuminate. It indicates the in-service status of the air conditioners with the addresses of 00 and 01.

3) The centralized controller communicates with the computer normally.

2.6 The below is MD-CCM04 weekly schedule timer

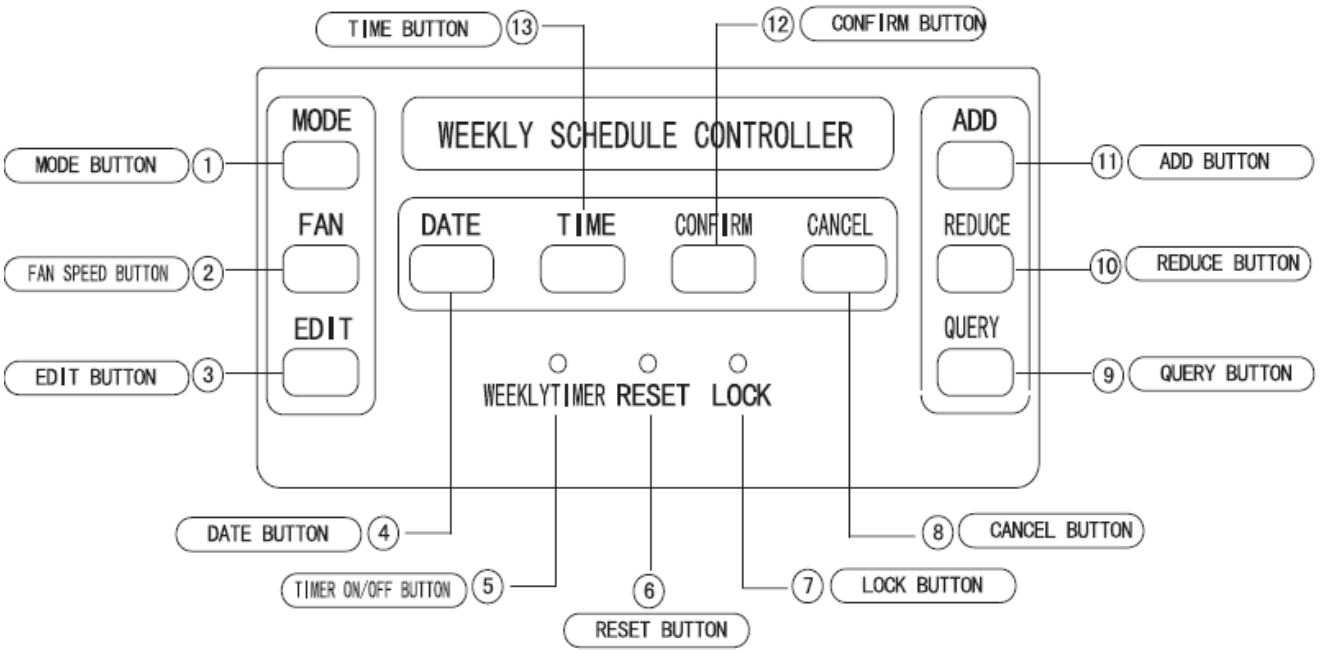
Note: The CONo 35INV can't connect to weekly schedule timer

Name and Function of Indicators on the controller



1. Operation mode indication: When press "MODE" and "ADD" or "REDUCE" button, the following mode can be selected
in circle: Cool→ Heat→ Off.
For cooling only model, heat mode should be skipped.
2 .Fan speed indication: There are four fan modes: low, middle, high, auto. For some models, no middle fan then the middle fan is seen as high speed.
3. Fault indication.
4. Temperature indication.
5. Weekly Schedule Controller switch indication.
6. Date indication.
7. Time indication.
8. Period indication.
9. Lock indication.
10. Week indication.

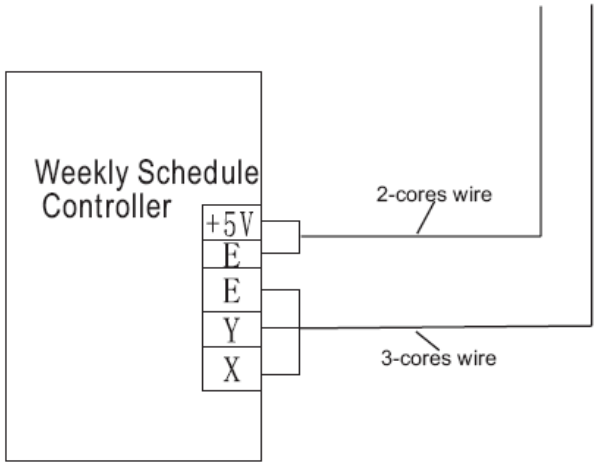
NAME AND OPERATION OF THE BUTTON ON THE WIRE CONTROLLER



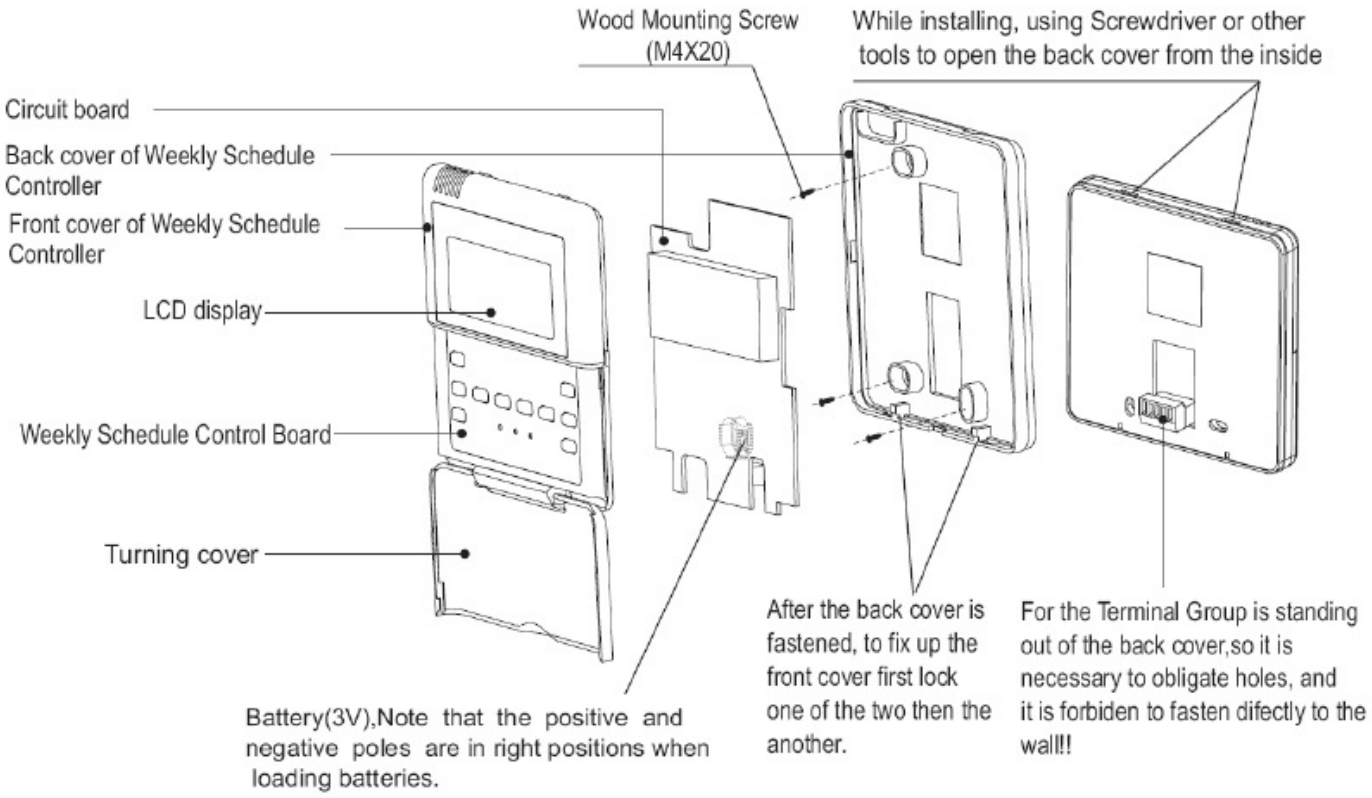
1. Mode button: When press this button and
ADD or REDUCE button to select Heat or Cool or off, press Confirm to save and back.
Remark: For the cooling only model, the heating mode should be skipped.
2. Fan speed button: press this button and ADD or REDUCE Button to select of High or Middle or Low or Auto, press
Confirm to save and back.
3. Edit button: When press this button, can setup Week and Date and Period.
4. Day button: press this button and ADD or REDUCE button to select of High or Middle or Low or Auto, press
Confirm to save and back.
5. Timer on/off button: Press this button, can turn off the weekly timer function.
6. Reset button: When press this button, all of the display part of LCD will be light last 2 second when weekly timer has been electrified or reset. Following the lamp will be closed and last 1 second. So the system will come into normal display state and need to carry out initial setting.
7. Lock button: press this button, weekly timer come into lock mode, Press LOCK again, lock mode is unchained at once. Weekly timer lock mode state can not be canceled when weekly timer has come back to supply power after interruption of power supply.
8. Cancel button: It is for not saving and retreating, or to cancel the lock.
9. Query button: Press “Query” “Select” “query ”“present” temperature value press “Cancel ”to back, press “Confirm” time section parameters' setting :press “Add” or “reduce” to select several days from “Sun” to “Sat” 7 days, press” Confirm “”1 “~”8 “time section selection beginning from No.1 time section , setting mode、fan's velocity、starting time and end time, till 8 time sections are finished press “Confirm” to save press “Cancel” to retreat.
10. Reduce button: It is for reducing to numbers and moving left or up to the other.
11. Add button: It is for adding to numbers, and moving right or down to the other.
12. Confirm button: It is for confirm selection.
13.Time button: When press button, and press “Add” or “Reduce” to adjust the hours value , press “Confirm” adjust minutes: press “Add “or “Reduce” to adjust the minutes value, press “Confirm” to save and back.

Installation

Wiring technique and principle：



Instruction for installing:
When a weekly schedule controller is needed, a small 2-cores wire and 3-cores wire should be added. Connect with the same color.


Wood Mounting Screw
(M4X20)
While installing, using Screwdriver or other tools to open the back cover from the inside
Circuit board
Back cover of Weekly Schedule Controller
Front cover of Weekly Schedule Controller
LCD display
Weekly Schedule Control Board
Turning cover
Battery(3V),Note that the positive and negative poles are in right positions when loading batteries.
After the back cover is fastened, to fix up the front cover first lock one of the two then the another.
For the Terminal Group is standing out of the back cover,so it is necessary to obligate holes, and it is forbiden to fasten difectly to the wall!!

Note

- The connecting wire should be a little longer as to take away the switch board easily for maintenance.
- The connecting wire should be a little longer as to take away the controller easily for maintenance.